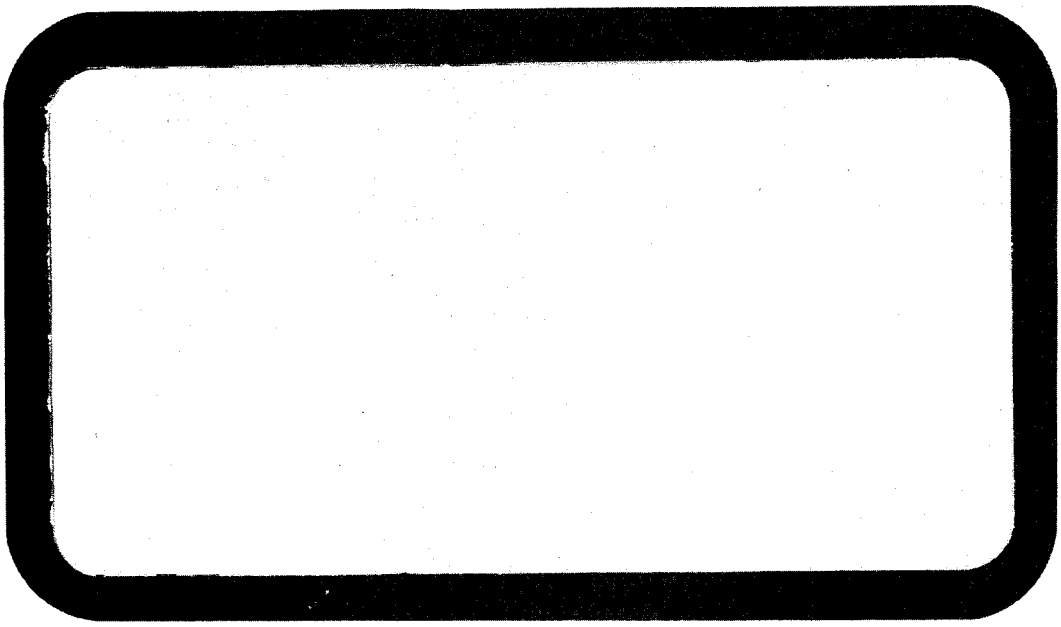

Burns	Waste
&	Consultants,
McDonnell	Inc.

ENGINEERS-GEOLOGISTS-SCIENTISTS · 100% EMPLOYEE-OWNED

SWMU 10 EXCAVATION AND PAVING ACTIVITIES REPORT

ARMCO KANSAS CITY FACILITY

January 26, 1998

Project 94-498-4-004-05

Prepared By:
Burns & McDonnell Waste Consultants, Inc.
Engineers-Geologists-Consultants
Kansas City, Missouri

fib

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RCRA PERMITTING & COMPLIANCE BRANCH (RPCB)

ARMCO INC.

SPECIALTY FLAT-ROLLED STEELS
P. O. Box 832
Butler, PA 16003-0832
412-284-2000

CERTIFIED MAIL ARTICLE NO. P 531 061 359

January 26, 1998

Mr. William Spratlin
Director, Air, RCRA and Toxics Division
United States Environmental Protection Agency - Region VII
726 Minnesota Avenue
Kansas City, Kansas 66101

Re: Armco Inc., Kansas City Facility
HSWA Corrective Action Program
Permit Number MOD 007 118 029
SWMU 10 Excavation and Paving Activities Report

Dear Mr. Spratlin:

Enclosed are three (3) copies of the SWMU 10 Excavation and Paving Activities Report dated January 26, 1998, which has been prepared for Armco Inc. by Burns & McDonnell Waste Consultants, Inc. of Kansas City, Missouri. This Report summarizes investigation and remedial activities that were conducted at SWMU 10 -- Dust Railcar Loading Area -- Bar Joist Building, in the fall of 1997 in accordance with the approved SWMU 10 Workplan.

Field investigation activities were completed at SWMU 10 to define the nature and extent of contamination characterization for the RCRA Facility Investigation (RFI). Excavation and Paving remedial activities were completed at SWMU 10 to fulfill the requirement of Part II, Section XXXI.A.2 of the Permit, which was to clean and assess the integrity of the unit to prevent the movement of wastes into the environment. Armco has met these Permit requirements and investigation and remedial activities are complete for this SWMU. A summary of investigation results and an assessment of risks to human health and the environment will be provided in the RFI Report in accordance with Section XXX of Part II of the Permit.

As we have indicated before, the SWMU 10 area is under the ownership and control of GS Technologies Operating Company (GST Steel). Additionally, Armco believes that a good job has been done in this area given the operating and infrastructure constraints. Armco has removed 268 tons of material from this area, backfilled with compacted sub-base material and paved the entire area. As a result of this work, the potential for further exposure to cadmium and lead connected with historical deposition of these materials in SWMU 10 has been eliminated.

I certify under penalty of law that these documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or

ARMCO

those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. This Workplan Addendum and Certification is submitted on behalf of Armco Inc.

If you have any questions concerning the enclosed SWMU 10 Excavation and Paving Activities Report, please contact Mr. Myrl Wear at (816) 242-5855 or me at (412) 284-2267.

Very truly yours ,

Daniel F. Szwed
Director - Environmental Affairs

Enclosures
cc
w/enclosures: J. H. Figg - Armco
B. M. Haller - Armco
S. Mahfood - MDNR (2 copies)
L. J. Moody - Armco
K. A. Niebrugge - GST Steel
D. P. Reis - Quarles & Brady
M. R. Wear - Armco

cc letter only: D. A. Kazmierczak - Burns & McDonnell
J. M. Heiman - EPA Region VII
R. A. Nussbaum - MDNR
S. M. Pinkerton - MDNR
R. L. Stewart - EPA Region VII
D. Westcott - MDNR

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SWMU 10 EXCAVATION AND PAVING ACTIVITIES REPORT
ARMCO KANSAS CITY FACILITY
KANSAS CITY, MISSOURI

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LIST OF FIGURES

Tables and figures are included following the chapter of text in which they are referenced.

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LIST OF ABBREVIATIONS AND ACRONYMS

Armco	Armco Inc.
bgs	Below Ground Surface
BMWCI	Burns & McDonnell Waste Consultants, Inc.
Facility	Armco Kansas City Facility
GST	GST Steel
IM	Interim Measures
Permit	Armco's Part B Post-Closure Permit
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
SHSP	Site Health and Safety Plan
SSL	Soil Screening Level
SWMU	Solid Waste Management Unit
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency

* * * * *

1.0 INTRODUCTION

Armco Inc. has conducted interim measures activities and excavation and paving remedial activities at their Kansas City, Missouri Facility (Facility) as part of the Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI). These activities have been conducted to satisfy requirements presented in Part II, Section XXXI of Armco's Part B Post-Closure Permit (Permit) with the United States Environmental Protection Agency (USEPA). This Report summarizes activities completed at Solid Waste Management Unit (SWMU) 10, Dust Railcar Loading Area - Bar Joist Building in the fall of 1997, and was prepared by Burns & McDonnell Waste Consultants, Inc. (BMWCI) at Armco's request.

SWMU 10 is located on property that since 1993 has been exclusively owned and operated by GST Steel (GST). Additional background information concerning the Facility can be found in the RFI Workplan (BMWCI, 1996b) and its Addendum No. 1 (BMWCI, 1997a). Specific background information regarding SWMU 10 can be found in the Revised Interim Measures Plan (BMWCI, 1996a) and its Addendum No. 1 (BMWCI, 1996c).

Interim measures activities were completed at SWMU 10 in 1996 in accordance with the Interim Measures Plan. Information concerning the nature and extent of contamination at SWMU 10 was collected and results from this investigation were presented in the Interim Measures (IM) Investigation Report (BMWCI, 1997b). A summary of these results is presented in Appendix A. Based on the findings of the 1996 investigation at SWMU 10, the following items were proposed in the SWMU 10 Workplan (BMWCI, 1997c) to meet RFI objectives and Permit conditions:

- Further characterization of the nature and extent of soils impacted by metals (lead and cadmium).
- Paving of the cadmium and lead impacted area, with limited excavation of the area to provide clearance for the placement of clean subbase material and a 4-inch asphalt layer.

Investigation, excavation, and paving activities were conducted at SWMU 10 in the fall of 1997 in accordance with the SWMU 10 Workplan (BMWCI, 1997c) to fulfill the above items.

This report presents the findings of the additional investigation activities and summarizes the excavation and paving remedial activities completed at SWMU 10 in 1997. This Report is organized as follows:

Chapter 1.0: Introduction
Chapter 2.0: Subsurface Investigation
Chapter 3.0: Excavation and Paving Remedial Activities
Chapter 4.0: Conclusions
Chapter 5.0: References

* * * * *

2.0 SUBSURFACE INVESTIGATION

2.1 SUMMARY OF INVESTIGATION ACTIVITIES COMPLETED

During the subsurface investigation at SWMU 10 in September 1997, information regarding the vertical extent of cadmium and lead concentrations was assessed through the collection of subsurface soil samples from direct-push borings. Direct-push boring locations are shown in Figure 2-1. A total of six direct-push boreholes (Borings 10B1 to 10B6) were advanced. Borings were placed on the inside and outside of the western wall of the Bar Joist Building in the approximate center of each previously sampled surface soil grid location from the 1996 interim measures investigation. Two to three samples were collected from each boring within the following depth intervals: 0-2 feet, 2-4 feet, and 4-8 feet below ground surface (bgs). Each sample was submitted to the laboratory for cadmium and lead analysis.

Borehole logs for Borings 10B1 through 10B6 are provided in Appendix B. Chain of custody records for the samples submitted for laboratory analysis are provided in Appendix C. The quality control evaluation report and the analytical laboratory reports are provided in Appendices D and E, respectively.

2.2 SUMMARY OF NATURE AND EXTENT OF CONTAMINATION

Subsurface soil results for cadmium and lead are summarized in Table 2-1. Figure 2-1 presents the subsurface soil sampling locations and analytical results.

Cadmium was detected in all of the subsurface soil samples. Cadmium concentrations decreased with increased sample depth. Cadmium concentrations ranged from 1.84 to 22.3 mg/Kg in the uppermost samples collected (0-2 and 2-4 feet bgs) and from 0.27 J[1] to 0.63 J mg/Kg in the lowermost sample collected (4-8 feet bgs). The generic soil screening level (SSL) for cadmium is 8 mg/Kg. The application of generic SSLs was fully defined in the Phase 1 Data Package for

[1] A "J" flag indicates analytical data was qualified as estimated by the analytical laboratory.

the RFI (BMWCI, 1997d).[2] Therefore, vertical extent of cadmium concentrations has been defined.

Lead was detected in all of the subsurface soil samples. Lead concentrations decreased with increased sample depth. Lead concentrations ranged from 56.7 J*[3] to 1,150 J* mg/Kg in the uppermost samples collected (0-4 feet bgs) and from 10.8 J* to 24.8 J* mg/Kg in the lowermost samples collected (4-8 feet bgs). The generic SSL for lead is 400 mg/Kg; therefore, vertical extent of lead concentrations has been defined.

* * * * *

[2] Generic SSLs, as established in Soil Screening Guidance (USEPA, 1996), are risk-based and account for migration to groundwater using a default dilution attenuation factor of 20.

[3] A "J*" flag indicates analytical data was qualified as estimated by BMWCI during the quality control evaluation due to matrix spike and/or matrix spike duplicate percent recoveries below quality control limits.

Table 2-1
Subsurface Soil Sample Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building
Armco Kansas City Facility

Sample Point:		10B1/DP1	10B1/DP2	10B2/DP1	10B2/DP2	10B2/DP3	10B3/DP1	10B3/DP2
Date Sampled:		9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97
Sample Depth From:		0	4	0	2	4	0	2
Sample Depth To:		4	8	2	4	8	2	4
Laboratory Number:		D97-10900-9	D97-10900-10	D97-10900-6	D97-10900-7	D97-10900-8	D97-10900-1	D97-10900-2
Sample Type:								
Metals, Total	UNITS							
Cadmium, Total	mg/Kg	***5.43 J****	***0.3 J***	***5.79 J****	***3.84 J****	***0.28 J***	***18 J****	***11.2 J****
Lead, Total	mg/Kg	***188 J****	***12.6 J****	***306 J****	***107 J****	***13.7 J****	***1,080 J****	***226 J****

LEGEND:
B - Detected in the associated laboratory method blank
R - Qualified as unusable in the QC evaluation
NA - Not Analyzed
F - Detected in the associated equipment rinsate blank
T - Detected in associated trip blank
ND - Not Detected
J - Qualified as estimated by the laboratory
U - Qualified as undetected by the laboratory
J* - Qualified as estimated in the QC evaluation
U* - Qualified as undetected in the QC evaluation

Table 2-1
Subsurface Soil Sample Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building
Armco Kansas City Facility

	Sample Point:	10B3/DP3	10B4/DP1	10B4/DP1D	10B4/DP2	10B4/DP3	10B5/DP1	10B5/DP2
	Date Sampled:	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97	9/8/97
	Sample Depth From:	5	0	0	2	4	0	2
	Sample Depth To:	8	2	2	4	8	2	4
	Laboratory Number:	D97-10900-5	D97-10900-12	D97-10900-13	D97-10900-14	D97-10900-15	D97-10900-16	D97-10900-17
	Sample Type:			Duplicate				
Metals, Total	UNITS							
Cadmium, Total	mg/Kg	*0.46 J*	*6.24 J**	*8.28 J**	*1.84 J**	*0.27 J*	*16.8 J**	*4.7 J**
Lead, Total	mg/Kg	*13.6 J**	*484 J**	*1,000 J**	*56.1 J**	*10.8 J**	*858 J**	*698 J**

LEGEND:
B - Detected in the associated laboratory method blank
R - Qualified as unusable in the QC evaluation
NA - Not Analyzed
F - Detected in the associated equipment rinsate blank
T - Detected in associated trip blank
ND - Not Detected
J - Qualified as estimated by the laboratory
U - Qualified as undetected by the laboratory
J* - Qualified as estimated in the QC evaluation
U* - Qualified as undetected in the QC evaluation

Table 2-1
Subsurface Soil Sample Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building
Armco Kansas City Facility

Sample Point:		10B5/DP3	10B6/DP1	10B6/DP2	10B6/DP3
Date Sampled:		9/8/97	9/8/97	9/8/97	9/8/97
Sample Depth From:		4	0	2	4
Sample Depth To:		8	2	4	8
Laboratory Number:		D97-10900-18	D97-10900-19	D97-10900-20	D97-10900-21
Sample Type:					
Metals, Total	UNITS				
Cadmium, Total	mg/Kg	***0.61 J***	***22.3 J****	***11.3 J****	***0.63 J***
Lead, Total	mg/Kg	***13.1 J****	***1,150 J****	***265 J****	***24.8 J****

LEGEND: B - Detected in the associated laboratory method blank
R - Qualified as unusable in the QC evaluation
NA - Not Analyzed
F - Detected in the associated equipment rinsate blank
T - Detected in associated trip blank
ND - Not Detected
J - Qualified as estimated by the laboratory
U - Qualified as undetected by the laboratory
J* - Qualified as estimated in the QC evaluation
U* - Qualified as undetected in the QC evaluation

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NOTES:

1. NO ACTION REQUIRED IN NORTHERN PORTION OF SWMU 10 PURSUENT TO APPROVED WORKPLAN.
2. SOIL SAMPLES WERE COLLECTED FROM SURFACE GRID LOCATIONS DURING OCTOBER 1996 INVESTIGATION ACTIVITIES.
3. SOIL SAMPLES WERE COLLECTED FROM SOIL BORING LOCATIONS DURING SEPTEMBER 1997 INVESTIGATION ACTIVITIES.

APPROXIMATE LIMITS OF NORTHERN PORTION OF SWMU 10

STORAGE

Sample	Depth (ft)	Cadmium	Lead	Units
10B3 / DP1	0-2	18 J*	1080 J*	mg/Kg
10B3 / DP2	2-4	11.2 J*	226 J*	mg/Kg
10B3 / DP3	5-8	0.46 J	13.6 J*	mg/Kg

Sample	Depth (ft)	Cadmium	Lead	Units
10B2 / DP1	0-2	5.79 J*	306 J*	mg/Kg
10B2 / DP2	2-4	3.84 J*	107 J*	mg/Kg
10B2 / DP3	4-8	0.28 J	13.7 J*	mg/Kg

Sample	Depth (ft)	Cadmium	Lead	Units
10B6 / DP1	0-2	22.3 J*	1150 J*	mg/Kg
10B6 / DP2	2-4	11.3 J*	265 J*	mg/Kg
10B6 / DP3	4-8	0.63 J	24.8 J*	mg/Kg

10B3 10B6 10G3 10G6 10B2 10B5 10G2 10G5 10B1 10B4 10G1 10G4

APPROXIMATE LIMITS OF SOUTHERN PORTION OF SWMU 10

Sample	Depth (ft)	Cadmium	Lead	Units
10B5 / DP1	0-2	16.8 J*	858 J*	mg/Kg
10B5 / DP2	2-4	4.7 J*	698 J*	mg/Kg
10B5 / DP3	4-8	0.61 J	13.1 J*	mg/Kg

BAR JOIST SHIPPING BUILDING

Sample	Depth (ft)	Cadmium	Lead	Units
10B4 / DP1	0-2	6.24 J*	484 J*	mg/Kg
10B4 / DP1D	0-2	8.28 J*	1000 J*	mg/Kg
10B4 / DP2	2-4	1.84 J*	56.1 J*	mg/Kg
10B4 / DP3	4-8	0.27 J	10.8 J*	mg/Kg

WEST WALL OF BUILDING

Sample	Depth (ft)	Cadmium	Lead	Units
10B1 / DP1	0-4	5.43 J*	188 J*	mg/Kg
10B1 / DP2	4-8	0.3 J	12.6 J*	mg/Kg

LEGEND

- SOIL BORING LOCATION
- LIMITS OF EXCAVATION & PAVING
- APPROXIMATE LOCATION OF SURFACE SAMPLE GRID
- RAILROAD TRACK
- SURFACE DRAIN LOCATION
- APPROXIMATE LIMITS OF SWMU 10

NORTH

30' 0' 30' 60'

SCALE IN FEET

Burns & McDonnell Waste Consultants, Inc.

Figure 2-1
SWMU 10
INVESTIGATION SAMPLING LOCATIONS
ARMCO KANSAS CITY FACILITY
GST STEEL PROPERTY

3.0 EXCAVATION AND PAVING REMEDIAL ACTIVITIES

As required by Part II, Section XXXI of the Permit, Armco has conducted remedial activities at SWMU 10 to clean and assess the integrity of SWMU 10 to prevent the movement of wastes into the environment. As defined in the SWMU 10 Workplan, excavation of surface soil and paving was completed. Remedial activities were performed by personnel from Heritage Environmental Services. BMWCI personnel provided oversight and air monitoring during remedial activities.

3.1 SUMMARY OF EXCAVATION ACTIVITIES

Excavation activities were performed at SWMU 10 to allow the pavement to match existing grade and facilitate surface drainage. Excavation activities were performed from October 21 to 24, 1997 in accordance with the SWMU 10 Workplan, the Site Health and Safety Plan (SHSP) (provided in the RFI Workplan) and the SHSP Amendment (provided as Appendix A in the SWMU 10 Workplan).

3.1.1 Surface Soil Excavation

Excavation activities included the removal of soil from SWMU 10 from the area highlighted in Figures 2-1 and 3-1. A photograph log of the excavation activities is provided in Appendix F.

Surface soil was excavated on both the sides of the western wall of the Bar Joist Building (see photographs 1 and 2 in Appendix F). The excavation stopped at the railroad tracks on the western side of the wall. On the eastern side of the wall, soil was removed from the top of the railroad tracks to expose the railroad ties. The total dimensions of the excavation varied from approximately 17 feet wide on the north end to 26 feet wide on the south end by 150 feet long.

Figure 3-1 indicates the depths of the excavation. As specified in the SWMU 10 Workplan, a minimum of 1.0 foot of surface soil was removed from the excavation area, with the exception of areas where railroad ties prevented further excavation. During the excavation activities, a decision was made by Armco to advance the excavation area deeper. The entire area between the railroad tracks on the west and the railroad tracks on the east was excavated to between 1 to 2

feet bgs. In addition, soil was removed from the central portion of the excavation area to depths of 2 to 4.5 feet bgs (see photographs 3 through 5 in Appendix F). The approximate total volume of surface soil removed was 180 cubic yards.

Materials encountered in the excavation area consisted of asphalt and/or reddish brown silt from the surface to approximately 0.5 feet. Below the reddish brown silt, light gray gravel and dark brown gravel with slag, brick, and scrap metal extended to approximately 4 feet bgs. Brown and gray clay were observed below 4 feet. This reddish brown silty material was used as a visual indicator for advancing the excavation to depths below 1 foot bgs (see photograph 6 in Appendix F).

As specified in the Amendment to the SHSP and in an effort to reduce the potential for worker exposure during the excavation activities, all excavation activities were performed in Level C personal protective equipment, including the use of air purifying respirators. Dust suppression activities consisted of spraying a water mist over the excavation and excavated soil (see photographs 5 and 7 in Appendix F). Also in accordance with the SHSP Amendment, ambient (Sample A-1) and personal (Sample P-1) air monitoring was performed for a time weighted exposure for cadmium and lead. Table 3-1 presents the results for these samples. Air sample results for samples A-1 and P-1 were nondetect, indicating effective dust suppression.

3.1.2 Excavated Soil Disposal

Excavated surface soil was placed in dump trucks for disposal at an off-site hazardous waste disposal facility. Samples of excavated material were collected and analyzed according to the specifications of the disposal facility. The SWMU 10 Toxicity Characteristic Leaching Procedure (TCLP) test results documented in the IM Report (BMWCI, 1997b) suggested that the material should not be considered a hazardous waste. However, since this area was used to manage electric arc furnace baghouse dust, the excavated material was managed as K061 waste. A total of 268 tons of material was transported off-site for disposal. Appendix G contains copies of the hazardous waste manifests.

3.1.3 Confirmation Sampling Results

Confirmation soil samples were obtained to document concentrations of cadmium and lead remaining in the excavation floor beneath the area to be paved (see photograph 8 in Appendix F). Ten confirmation samples (10CF1 through 10CF10) were collected and are shown on Figure 3-1. Sample locations 10CF1 through 10CF6 correspond to direct push sample locations 10B1 through 10B6. Samples 10CF7 and 10CF9 were collected at the south end and Samples 10CF8 and 10CF10 were collected at the north end of the excavation area. Table 3-2 presents the confirmation sample analytical results.

Cadmium was detected in 9 of the 10 confirmation soil samples. Cadmium concentrations ranged from 5.16 to 35.8 mg/Kg in areas where the excavation extended from 1 to 2 feet bgs, and from nondetect to 9.82 J* mg/Kg in the central portion of the excavation from greater than 2 to 4.5 feet bgs. Sample 10CF2/SR1, which was nondetect for cadmium, was in the area of deepest excavation.

Lead was detected in all confirmation soil samples. Lead concentrations ranged from 208 to 1,940 mg/Kg in areas where the excavation extended from 1 to 2 feet bgs, and from 131 to 647 mg/Kg in the central portion of the excavation from greater than 2 to 4.5 feet bgs. The lowest lead concentration occurred in Sample 10CF2/SR1, which was collected from the deepest area of the excavation.

3.2 SUMMARY OF PAVING ACTIVITIES

Following excavation activities, the excavated area was backfilled with a subbase material consisting of 1-inch minus crushed limestone gravel, to within approximately three inches of the existing grade. Paving with asphalt was then completed (approximately three to four inches in thickness) to match the grade, and to allow for proper drainage (see photographs 9 and 10 in Appendix F).

* * * * *

Table 3-1
Air Monitoring Sample Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building
Armco Kansas City Facility

		Sample Point:	P1/27151	A1/27149	FB
		Date Sampled:	10/21/97	10/21/97	10/21/97
		Laboratory Number:	D97-12793-3	D97-12793-2	D97-12793-1
		Sample Type:	Personal	Area	Field Blank
Metals, Total	UNITS				
Cadmium, Total	$\mu g/m^3$		1.0 U	1.0 U	1.0 U
Lead, Total	$\mu g/m^3$		1.0 U	1.0 U	1.0 U

LEGEND:

B - Detected in the associated laboratory method blank
R - Qualified as unusable in the QC evaluation
NA - Not Analyzed
ND - Not Detected
F - Detected in the associated equipment rinsate blank
T - Detected in the associated trip blank
U* - Qualified as undetected in the QC evaluation
J - Qualified as estimated by the laboratory
U - Qualified as undetected by the laboratory
J* - Qualified as estimated in the QC evaluation

Table 3-2
Confirmation Soil Sample Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building
Armco Kansas City Facility

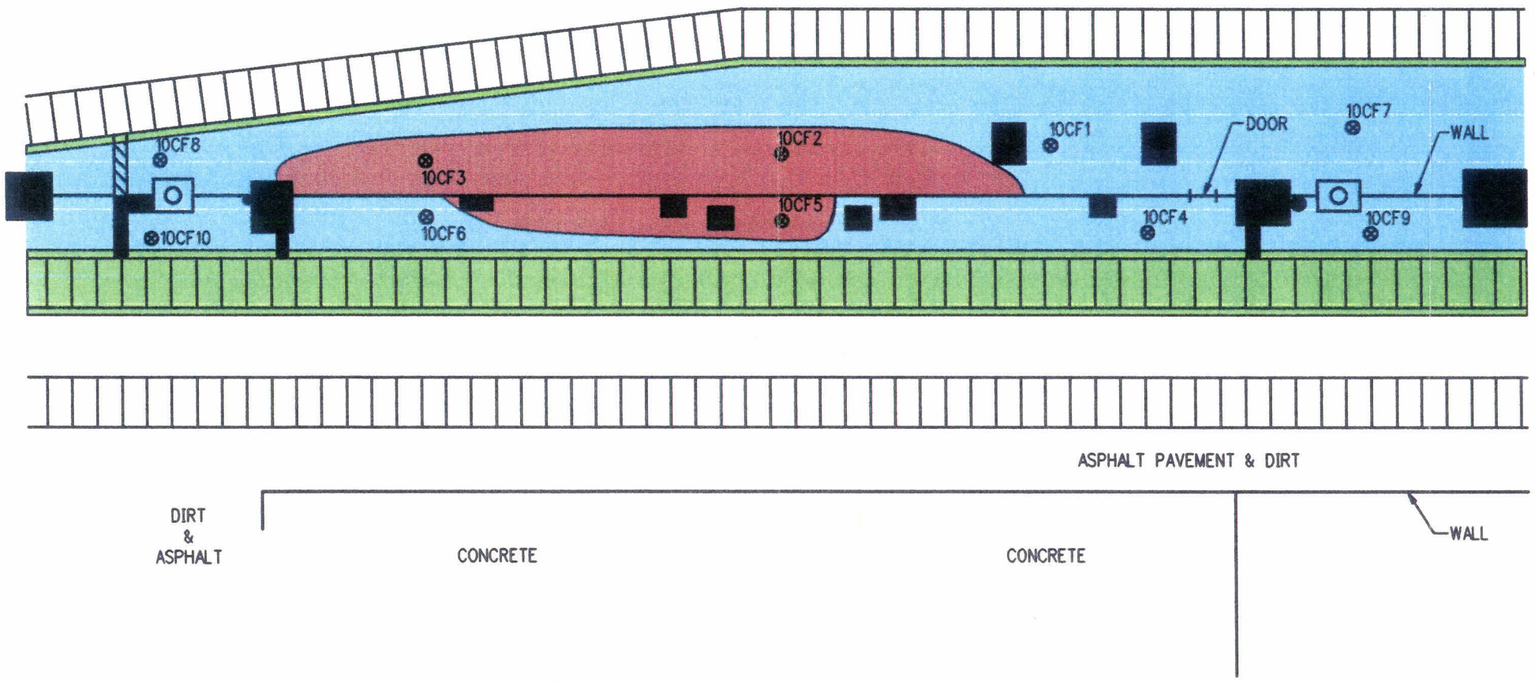
	Sample Point:	10CF1/SR1	10CF1/SR1D	10CF2/SR1	10CF3/SR1	10CF4/SR1	10CF5/SR1	10CF6/SR1
	Date Sampled:	10/24/97	10/24/97	10/24/97	10/24/97	10/24/97	10/24/97	10/24/97
	Sample Depth From:	2	2	4	2	2	2.5	1.5
	Sample Depth To:	2	2	4	2	2	2.5	1.5
	Laboratory Number:	D97-13024-1	D97-13024-2	D97-13024-3	D97-13024-4	D97-13024-5	D97-13024-6	D97-13024-9
	Sample Type:		Duplicate					
Metals, Total	UNITS							
Cadmium, Total	mg/Kg	***15.7***	***21***	0.66 U	***5.16***	***10.5***	***9.82 J****	***35.8***
Lead, Total	mg/Kg	***983***	***747***	***131***	***208***	***602***	***647***	***1,940***

LEGEND:
B - Detected in the associated laboratory method blank
R - Qualified as unusable in the QC evaluation
NA - Not Analyzed
F - Detected in the associated equipment rinsate blank
T - Detected in associated trip blank
ND - Not Detected
J - Qualified as estimated by the laboratory
U - Qualified as undetected by the laboratory
J* - Qualified as estimated in the QC evaluation
U* - Qualified as undetected in the QC evaluation

Table 3-2
Confirmation Soil Sample Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building
Armco Kansas City Facility

	Sample Point:		10CF7/SR1	10CF8/SR1	10CF9/SR1	10CF10/SR1
	Date Sampled:		10/24/97	10/24/97	10/24/97	10/24/97
	Sample Depth From:		1.5	2	1.5	2.5
	Sample Depth To:		1.5	2	1.5	2.5
	Laboratory Number:		D97-13024-10	D97-13024-11	D97-13024-12	D97-13024-13
	Sample Type:					
Metals, Total		UNITS				
Cadmium, Total		mg/Kg	***6.9***	***19.2***	***9.67***	***10.9***
Lead, Total		mg/Kg	***389***	***1,420***	***515***	***541***

LEGEND:
B - Detected in the associated laboratory method blank
R - Qualified as unusable in the QC evaluation
NA - Not Analyzed
F - Detected in the associated equipment rinsate blank
T - Detected in associated trip blank
ND - Not Detected
J - Qualified as estimated by the laboratory
U - Qualified as undetected by the laboratory
J* - Qualified as estimated in the QC evaluation
U* - Qualified as undetected in the QC evaluation



LEGEND

- 0.5' TO 1.0' EXCAVATION DEPTH
- 1.0' TO 2.0' EXCAVATION DEPTH
- 2.0' TO 4.5' EXCAVATION DEPTH
- CONCRETE FOOTING
- ⊗ CONFIRMATION SOIL SAMPLE
- RAILROAD TRACK

15' 0' 15' 30'

SCALE IN FEET

Burns & McDonnell Waste Consultants, Inc.

Figure 3-1

SWMU 10
REMEDIAL EXCAVATION LIMITS AND CONFIRMATION SAMPLE LOCATION MAP

ARMCOFG1.DGN/23-JAN-98 10:58/DBR

4.0 CONCLUSIONS

The overall objectives of the SWMU 10 activities, as specified in the Permit, were to:

- Collect data concerning the nature and extent of contamination at SWMU 10

- Clean and assess the integrity of SWMU 10 to prevent the movement of wastes into the environment.

As described in Section 2, September 1997 investigation activities defined the nature and extent of cadmium and lead concentrations. Remedial activities (excavation and paving) conducted during October 1997 satisfied the Permit requirements of cleaning and assessing the integrity of SWMU 10. Completion of the remedial activities has precluded the potential for future contaminant movement. In addition, the activities have removed the potential for direct contact and worker exposure to cadmium and lead associated with historical deposition of electric arc furnace baghouse dust at SWMU 10.

* * * * *

5.0 REFERENCES

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* * * * *

APPENDIX A

October 1996 SWMU 10 Interim Measures Investigation Results

Appendix A - Table 1
Surface Soil Sample Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building (GST)
RFI Interim Measures
Armco Kansas City Facility

Sample Point:		10G1/SR1	10G1/SR2	10G2/SR1	10G2/SR2	10G2/SR2D	10G3/SR1	10G3/SR2
Date Sampled:		10/29/96	10/29/96	10/29/96	10/29/96	10/29/96	10/29/96	10/29/96
Sample Depth From:		0	.5	0	.5	.5	0	.5
Sample Depth To:		.5	1	.5	1	1	.5	1
Laboratory Number:		D96-12266-1	D96-12266-3	D96-12266-10	D96-12266-11	D96-12266-12	D96-12266-13	D96-12266-16
Sample Type:						Duplicate		
Metals, Total	UNITS							
Cadmium, Total	mg/Kg	**13** F	**15.3** F	**42.5** F	**38.5** F	**38** F	**37.4** F	**38.2** F
Lead, Total	mg/Kg	**473**	**538**	**1,450**	**1,200**	**1,290**	**4,890**	**1,290**

LEGEND: B - Detected in the associated laboratory method blank
R - Qualified as unusable in the QC evaluation
D - Diluted sample
F - Detected in the associated equipment rinsate blank
T - Detected in associated trip blank
NA - Not Analyzed
J - Qualified as estimated by the laboratory
U - Qualified as undetected by the laboratory
ND - Not Detected
J* - Qualified as estimated in the QC evaluation
U* - Qualified as undetected in the QC evaluation

Appendix A - Table 1
Surface Soil Sample Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building (GST)
RFI Interim Measures
Armco Kansas City Facility

Sample Point:		10G4/SR1		10G4/SR2		10G5/SR1		10G5/SR2		10G6/SR1		10G6/SR2
Date Sampled:		10/29/96		10/29/96		10/29/96		10/29/96		10/29/96		10/29/96
Sample Depth From:		0		.5		0		.5		0		.5
Sample Depth To:		.5		1		.5		1		.5		1
Laboratory Number:		D96-12266-4		D96-12266-7		D96-12266-5		D96-12266-8		D96-12266-6		D96-12266-9
Sample Type:												
Metals, Total	UNITS											
Cadmium, Total	mg/Kg	**24**	F	**21.1**	F	**49.3**	F	**24.4**	F	**141**	F	**63.5**	F
Lead, Total	mg/Kg	**1,150**		**930**		**2,030**		**1,300**		**5,860**		**2,870**	

LEGEND: B - Detected in the associated laboratory method blank
R - Qualified as unusable in the QC evaluation
D - Diluted sample
F - Detected in the associated equipment rinsate blank
T - Detected in associated trip blank
NA - Not Analyzed
J - Qualified as estimated by the laboratory
U - Qualified as undetected by the laboratory
ND - Not Detected
J* - Qualified as estimated in the QC evaluation
U* - Qualified as undetected in the QC evaluation

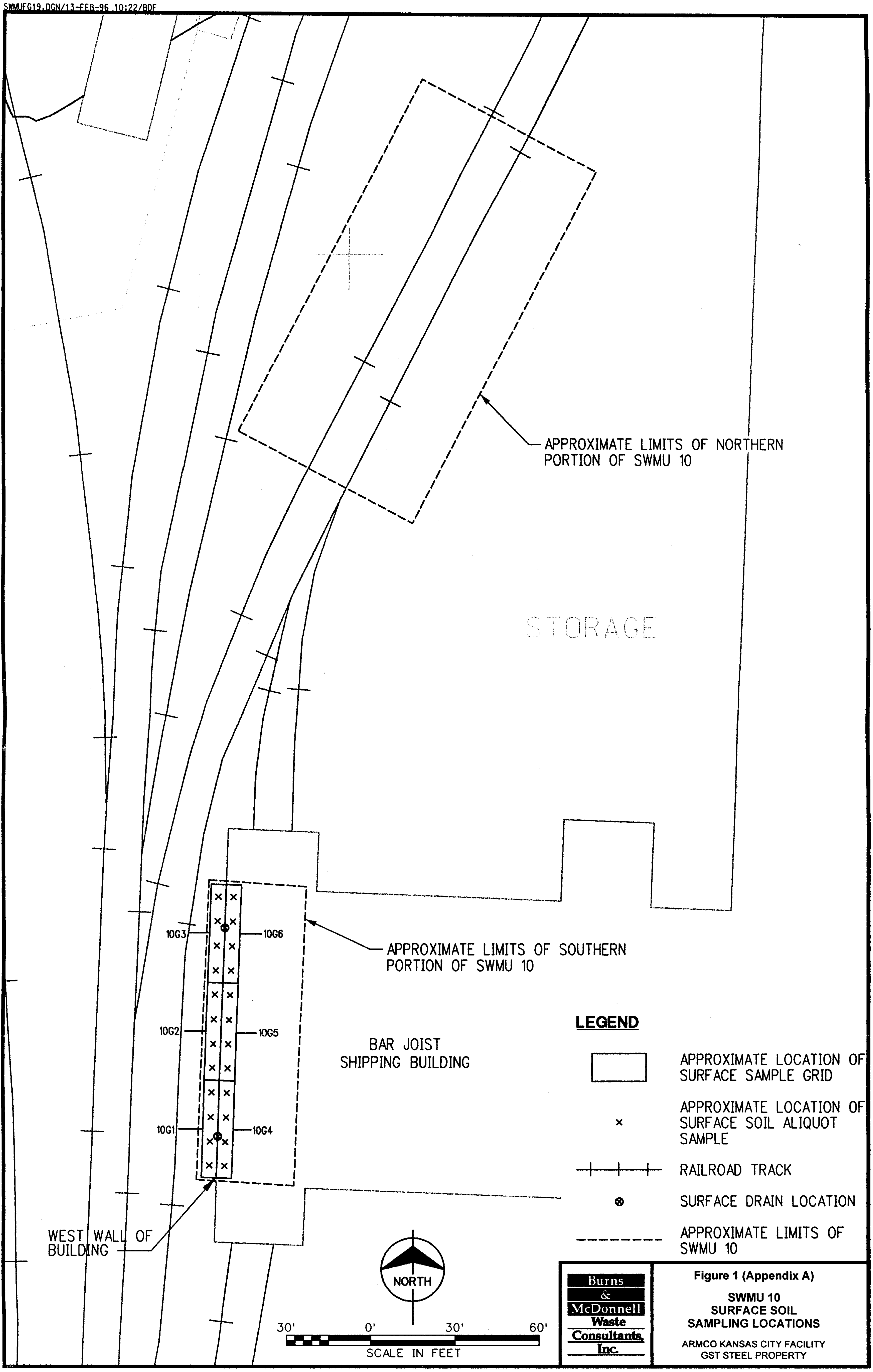
Appendix A - Table 2
Surface Soil Sample TCLP Analytical Results
SWMU 10 - Dust Railcar Loading Area - Bar Joist Building (GST)
RFI Interim Measures
Armco Kansas City Facility

	Sample Point:	10G3/SR1	10G6/SR1
	Date Sampled:	10/29/96	10/29/96
	Sample Depth From:	0	0
	Sample Depth To:	.5	.5
	Laboratory Number:	D96-13664-2	D96-13664-1
TCLP Metals	UNITS		
Cadmium	mg/L	**0.239**	**0.783**
Lead	mg/L	**0.845**	**2.2**

LEGEND:
B - Detected in the associated laboratory method blank
J* - Qualified as estimated in the QC evaluation
U - Qualified as undetected by the laboratory
NA - Not Analyzed
F - Detected in the associated equipment rinsate blank
R - Qualified as unusable in the QC evaluation
U* - Qualified as undetected in the QC evaluation
ND - Not Detected
J - Qualified as estimated by the laboratory
T - Detected in associated trip blank
D - Diluted sample

CONE[redacted]UNB.[redacted]=2,5[redacted]
BORDER,FIG11X17.DGN,OF=61
SITE.SITE.DGN,OF=1-2,61,63

SWMUFG19.DGN/13-FEB-96 10:22/BDF



APPENDIX B

Borehole Logs

Drilling Log

Project Name	Project Number	Boring Number
ARMCORFI	94-498-4-004-05	10B1

Ground Elevation	Location	Page
751.64 MSL	N1070247.86 E502484.16	1 of 1

Air Monitoring Equipment	Total Footage
OVM 580B	8.0

Drilling Type	Hole Size	Overburden Footage	Bedrock Footage	No. Of Samples	No. Of Core Boxes
Direct Push	2"	8	0	2	0

Drilling Company Hydrologic	**Driller (s)** Mike Ocsody, Jorge Jacobs
Drilling Rig Simco 200 Terra Pin	**Type of Sampler** Macro Core
Date 09/08/97 **To** 09/08/97	**Field Observer (s)** K.SIMMONS, Ryan Hrabe

Depth (feet)	Description	Class	Blow Count	Recov.	Run/ Time	Sample Desig.	PID (ppm) BZ	PID (ppm) BH	PID (ppm) S	Remarks/ Water Levels
1	SILT, trace clay, some slag gravel and sand, pale brown (10YR6/3) to brown (10YR5/3), moist, loose, nonplastic	ML FILL		1.3/ 4.0	14:08	DP1				Start at 14:00 Not enough recovery to sample 0-2 and 2-4 FT intervals, combined both into a 0-4 FT sample DP1
3	SILT, with clay, some slag gravel, black (10YR2/1), moist to wet, dense, nonplastic						0	0	0	Hard at 3.2 FT, then soft probing
5	CLAY, very dark gray (5Y3/1), moist, stiff, high plasticity	CH		4.0/ 4.0	14:12	DP2				
7	CLAY, dark grayish brown (2.5Y4/2), moist, stiff, high plasticity									
8	Total Depth 8.0 FT.						0	0	0	Stopped at 14:10
9										
10										
11										
12										
13										
14										

BZ=Breathing Zone BH=Bore Hole S=Sample

Drilling Log

Project Name	Project Number	Boring Number
ARMCORFI	94-498-4-004-05	10B2
Ground Elevation 751.71 MSL	**Location** N1070278.89 E502486.08	**Page** 1 of 1
Air Monitoring Equipment OVM 580B		**Total Footage** 8.0

Drilling Type	Hole Size	Overburden Footage	Bedrock Footage	No. Of Samples	No. Of Core Boxes
Direct Push	2"	8	0	3	0

Drilling Company Hydrologic	**Driller (s)** Mike Ocsody, Jorge Jacobs
Drilling Rig Simco 200 Terra Pin	**Type of Sampler** Macro Core
Date 09/08/97 **To** 09/08/97	**Field Observer (s)** K.SIMMONS, Ryan Hrabe

Depth (feet)	Description	Class	Blow Count	Recov.	Run/ Time	Sample Desig.	PID (ppm) BZ	PID (ppm) BH	PID (ppm) S	Remarks/ Water Levels
1	SILT, trace clay, some slag sand and gravel, light gray (10YR7/1), damp, loose, nonplastic	ML FILL			13:40	DP1				Start at 13:30
2	SILT, with sand, trace slag,brick, and gravel, brown (10YR4/3), moist, loose, nonplastic			2.7/ 4.0						
3					13:45	DP2				Hit hard object at 3 FT
4	CLAY, dark gray (5Y4/1), moist, stiff, high plasticity	CH					0	0	0	Note: Trace dust on sample core, sampled center of soil core from 4-8 FT.
5										
6				4.0/ 4.0	13:50	DP3				
7										
8	Total Depth 8.0 FT.						0	0	0	Stopped at 13:50
9										
10										
11										
12										
13										
14										

BZ=Breathing Zone BH=Bore Hole S=Sample

Drilling Log

Project Name	Project Number	Boring Number
ARMCORFI	94-498-4-004-05	10B3
Ground Elevation 751.73 MSL	**Location** N1070310.38 E502490.29	**Page** 1 of 1
Air Monitoring Equipment OVM 580B		**Total Footage** 8.0

Drilling Type	Hole Size	Overburden Footage	Bedrock Footage	No. Of Samples	No. Of Core Boxes
Direct Push	2"	8	0	3	0

Drilling Company Hydrologic	**Driller (s)** Mike Ocsody, Jorge Jacobs
Drilling Rig Simco 200 Terra Pin	**Type of Sampler** Macro Core
Date 09/08/97 **To** 09/08/97	**Field Observer (s)** K.SIMMONS, Ryan Hrabe

Depth (feet)	Description	Class	Blow Count	Recov.	Run/ Time	Sample Desig.	PID (ppm) BZ	PID (ppm) BH	PID (ppm) S	Remarks/ Water Levels
1	SILT, with slag sand and gravel, very dark grayish brown (10YR3/2), moist, loose, nonplastic, trace low plasticity clay	ML FILL			13:05	DP1				Start at 12:55
2	SILT, with slag sand and gravel, brown (10YR5/3), moist, loose, nonplastic, trace low plasticity clay, 0.1 FT black seam at 1.9 FT			2.5/ 4.0						
3					13:10	DP2 MS/ MSD				Took matrix spike and matrix spike duplicate from 2-4 FT
4	SILT, trace slag sand and gravel, very dark gray (10YR3/1), wet, loose, low to medium plasticity						0	0	0	Note: Did not sample 4-5 FT interval
5						NS				
	CLAY, trace silt, dark gray (5Y4/1), moist to wet, stiff, high plasticity	CH								1.5 TSF
6				4.0/ 4.0	13:25					
7						DP3				
8	Total Depth 8.0 FT.						0	0	0	Stopped at 13:15
9										
10										
11										
12										
13										
14										

BZ=Breathing Zone BH=Bore Hole S=Sample

Drilling Log

Project Name	Project Number	Boring Number
ARMCORFI	94-498-4-004-05	10B4
Ground Elevation 751.72 MSL	**Location** N1070241.32 E502493.53	**Page** 1 of 1
Air Monitoring Equipment OVM 580B		**Total Footage** 8.0

Drilling Type	Hole Size	Overburden Footage	Bedrock Footage	No. Of Samples	No. Of Core Boxes
Direct Push	2"	8	0	3	0

Drilling Company Hydrologic	**Driller (s)** Mike Ocsody, Jorge Jacobs
Drilling Rig Simco 200 Terra Pin	**Type of Sampler** Macro Core
Date 09/08/97 **To** 09/08/97	**Field Observer (s)** K.SIMMONS, Ryan Hrabe

Depth (feet)	Description	Class	Blow Count	Recov.	Run/ Time	Sample Desig.	PID (ppm) BZ	PID (ppm) BH	PID (ppm) S	Remarks/ Water Levels
1	SILT, some clay, trace slag sand and gravel, dark grayish brown (10YR4/2), moist, loose, trace to nonplastic	ML FILL		2.6/ 4.0	14:50	DP1 DP1D				Start at 14:55 DP1D is a duplicate of DP1
2	SLAG SAND, with silt, some slag gravel, very dark grayish brown (10YR3/2), moist, loose, nonplastic	SM FILL								
3					14:55	DP2				
4	CLAY, very dark gray (10YR3/1), moist, stiff, high plasticity	CH					0	0	0	
5										
6	CLAY, dark grayish brown (10YR4/1), moist, stiff, high plasticity			3.0/ 4.0	15:05	DP3				
7										
8							0	0	0	
	Total Depth 8.0 FT.									Stopped at 14:55
9										
10										
11										
12										
13										
14										

BZ=Breathing Zone BH=Bore Hole S=Sample

Drilling Log

Project Name	Project Number	Boring Number
ARMCORFI	94-498-4-004-05	10B5
Ground Elevation 751.74 MSL	**Location** N1070273.36 E502495.08	**Page** 1 of 1
Air Monitoring Equipment OVM 580B		**Total Footage** 8.0

Drilling Type	Hole Size	Overburden Footage	Bedrock Footage	No. Of Samples	No. Of Core Boxes
Direct Push	2"	8	0	3	0

Drilling Company Hydrologic	**Driller (s)** Mike Ocsody, Jorge Jacobs
Drilling Rig Simco 200 Terra Pin	**Type of Sampler** Macro Core
Date 09/08/97 **To** 09/08/97	**Field Observer (s)** K.SIMMONS, Ryan Hrabe

Depth (feet)	Description	Class	Blow Count	Recov.	Run/ Time	Sample Desig.	PID (ppm) BZ	PID (ppm) BH	PID (ppm) S	Remarks/ Water Levels
1	SILT, some clay, some slag sand and gravel, light brownish gray (10YR6/2) to dark brown (10YR3/3), damp, loose, nonplastic	ML FILL			15:15	DP1				Start at 15:10
2	SILT, some clay, some slag gravel, dark brown (10YR3/3), moist, stiff, medium plasticity			2.1 4.0						Slag in sampler preventing better sample recovery
3					15:20	DP2				
4	CLAY, dark gray (10YR4/1), moist to wet, stiff, high plasticity	CH					0	0	0	Gravel and silt sloughed into borehole from surface and obstructed part of sampler
5										
6				1.7/ 4.0	15:25	DP3				
7										Sampled center of sample core
8	Total Depth 8.0 FT.						0	0	0	Stopped at 15:20
9										
10										
11										
12										
13										
14										

BZ=Breathing Zone BH=Bore Hole S=Sample

Drilling Log

Project Name	Project Number	Boring Number
ARMCORFI	94-498-4-004-05	10B6
Ground Elevation 751.51 MSL	**Location** N1070312.18 E502497.03	**Page** 1 of 1
Air Monitoring Equipment OVM 580B		**Total Footage** 8.0

Drilling Type	Hole Size	Overburden Footage	Bedrock Footage	No. Of Samples	No. Of Core Boxes
Direct Push	2"	8	0	3	0

Drilling Company Hydrologic	**Driller (s)** Mike Ocsody, Jorge Jacobs
Drilling Rig Simco 200 Terra Pin	**Type of Sampler** Macro Core
Date 09/08/97 **To** 09/08/97	**Field Observer (s)** K.SIMMONS, Ryan Hrabe

Depth (feet)	Description	Class	Blow Count	Recov.	Run/ Time	Sample Desig.	PID (ppm) BZ	PID (ppm) BH	PID (ppm) S	Remarks/ Water Levels
1	SILT, with slag gravel, trace clay, dark grayish brown (10YR4/2), damp, loose, nonplastic	ML FILL								Start at 15:25
2	SILT, with slag sand and gravel, trace clay, brown (10YR4/3), moist, loose, nonplastic			2.5/ 4.0	15:30	DP1				
3	SILT, very dark gray (10YR3/1), moist to wet, soft, low plasticity				15:35	DP2				
4	CLAY, some silt, dark grayish brown (10YR4/2), moist to wet, stiff, high plasticity	CH					0	0	0	some gravel and silt is sloughing down into bore hole and sampler
5										
6				2.5/ 4.0	15:40	DP3				DP3 sample collected from center of soil core
7										
8							0	0	0	
8	Total Depth 8.0 FT.									Stopped at 15:35
9										
10										
11										
12										
13										
14										

BZ=Breathing Zone BH=Bore Hole S=Sample

APPENDIX C

Chain-of-Custody Records

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Waste Consultants, Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: ITS
Address: 1087 E. Collins Blvd.
City/State/Zip: Richardson, TX 75081
Telephone: (972) 238-5591

Document Control No.:
Lab. Reference No. or Episode No.: ORIGINAL

Attention: Sharon Shelton
Project Number: 94-458-4-004-03
Project Name: ARMCO RFI
Site, Group, or SWMU Name: SWMU 10

Sample Number		Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix					Number of Containers	Analysis: Cadmium, Lead	Remarks
Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas	Composite	Grab			
10 B3	DP1			0	2	9/8/97	1305		X		X	X	1	X	10900-1
10 B3	DP2			2	4	9/8/97	1310		X		X	X	1	X	2
10 B3	DP2MS			2	4	9/8/97	1310		X		X	X	1	X	3
10 B3	DP2MSD			2	4	9/8/97	1310		X		X	X	1	X	4
10 B3	DP3			5	8	9/8/97	1325		X		X	X	1	X	5
10 B2	DP1			0	2	9/8/97	1340		X		X	X	1	X	6
10 B2	DP2			2	4	9/8/97	1345		X		X		1	X	7
10 B2	DP3			4	8	9/8/97	1350		X		X		1	X	8
10 B1	DP1			0	4	9/8/97	1406		X		X		1	X	9
10 B1	DP2			4	8	9/8/97	1412		X		X		1	X	10
10 B1	DP2R			—	—	9/8/97	1425	X	X			X	1	X	11
10 B4	DP1			0	2	9/8/97	1450		X		X		1	X	12
10 B4	DP1D			0	2	9/8/97	1450		X		X		1	X	13
10 B4	DP2			2	4	9/8/97	1455		X		X		1	X	14
10 B4	DP3			4	8	9/8/97	1505		X		X		1	X	15

Sampler (signature):
Sampler (signature):

COOLER TEMPERATURE WHEN RECEIVED: 4 °C

Special Instructions: SCREENED FOR RADIOACTIVITY

Relinquished By:	Date/Time	Received By:	Date/Time
1. (signature):	9/8/97 1640	(signature):	9-9-97 0950
2. (signature):		(signature):	

Condition of Shipping Container: Good ☑ Fair ☐ Poor ☐
Ice Present in Container: Yes ☑ No ☐

Comments:

061996 Form WCI-OP1

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Waste Consultants, Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: ITS
Address: 1089 E. Collins Blvd.
City/State/Zip: Richardson TX 75081
Telephone: (972) 238-5591

Attention: Sharon Shelton

Document Control No.:

Lab. Reference No. or Episode No.:

Project Number: 94-498Y-004-03
Project Name: ARMCO RFI
Site, Group, or SWMU Name: Swmu 10

Sample Number		Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix					Number of Containers	Analysis: Cadmium, Lead	Remarks
Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas	Composite	Grab			
10B5	DP1			0	2	9/8/97	1515		X		X		1	X	10900-16
10B5	DP2			2	4	9/8/97	1520		X		X		1	X	17
10B5	DP3			4	8	9/8/97	1525		X		X		1	X	18
10B6	DP1			0	2	9/8/97	1530		X		X		1	X	19
10B6	DP2			2	4	9/8/97	1535		X		X		1	X	20
10B6	DP3			4	8	9/8/97	1540		X		X		1	X	21

SCREENED FOR RADIOACTIVITY

COOLER TEMPERATURE WHEN RECEIVED: 4 °C

Sampler (signature): Kenneth Simmons
Sampler (signature): Lynn Hall

Special Instructions:

Relinquished By:	Date/Time	Received By:	Date/Time	Condition of Shipping Container:	Ice Present in Container:
1. Kenneth Simmons (signature)	9/8/97 1640	B. Wilson (signature)	9-9-97 0950	Good ✓ Fair ☐ Poor ☐	Yes ✓ No ☐
Relinquished By: 2. (signature)	Date/Time	Received By: (signature)	Date/Time	Comments:	

061996 Form WCI-OP1

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Waste Consultants, Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: ITS
Address: 1089 E. Collins Blvd.
City/State/Zip: Richardson TX
Telephone: 888-487-5591

Document Control No.:
Lab. Reference No. or Episode No.:

Attention: Sharon Shelton

Project Number: 94-498-4-004-05 Project Name: ARMCO RFI

Site, Group, or SWMU Name: SWMU 10 Sample Time

Sample Number		Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix					Number of Containers	Analysis						Remarks
Sample Point	Sample Designator (Pump #)	Round	Year	From (Start)	To (Stop)	Date	Time (Duration)	Liquid	Solid	Gas	Composite	Grab		Lead	Cadmium					
FB	NONE	✓		0900	0901	10/21/97	~~0900~~		X				1	X	X	12793-1				Pump Flow Rate
A1	27149	✓		0900	1815	10/21/97	555		X				1	X	X				2	1.40 l/min.
P1	27151	✓		0905	1820	10/21/97	555		X				1	X	X				3	1.39 l/min.

ORIGINAL

Sampler (signature): Kenneth Seamon

Sampler (signature):

Special Instructions: Rush 24 Hour Turnaround

Relinquished By:	Date/Time	Received By:	Date/Time
1. Kenneth Seamon (signature)	10/21/97 1845	(signature)	10-22-97 1100
Relinquished By: 2. (signature)	Date/Time	Received By: (signature)	Date/Time

Condition of Shipping Container: Good ✓ Fair ☐ Poor ☐
Ice Present in Container: Yes ☐ No ✓

Comments:

061996 Form WCI-OP1

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Waste Consultants, Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: ITS
Address: 1089 E. Collins Blvd.
City/State/Zip: Richardson, TX 75081
Telephone: (888) 487-5591

Attention: Sharon Shelton

Document Control No.:

Lab. Reference No. or Episode No.:

Project Number: 94-4984-004.05 Project Name: ARMCORF1

Site, Group, or SWMU Name: SWMU 10

Sample Number		Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix					Number of Containers	Analysis: Cadmium, Lead	Remarks
Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas	Composite	Grab			
10CF1	SR1				2	10/24/97	1015		X			X	1	X	1
10CF1	SR1D				2	10/24/97	1020		X			X	1	X	2
10CF2	SR1				4	10/24/97	0952		X			X	1	X	3
10CF3	SR1				2	10/24/97	1000		X			X	1	X	4
10CF4	SR1				2	10/24/97	1025		X			X	1	X	5
10CF5	SR1				2.5	10/24/97	1030		X			X	1	X	6
10CF5	SR1MS				2.5	10/24/97	1030		X			X	1	X	7
10CF5	SR1MSD				2.5	10/24/97	1030		X			X	1	X	8
10CF6	SR1				1.5	10/24/97	1035		X			X	1	X	9
10CF7	SR1				1.5	10/24/97	1120		X			X	1	X	10
10CF8	SR1				2	10/24/97	1130		X			X	1	X	11
10CF9	SR1				1.5	10/24/97	1135		X			X	1	X	12
10CF10	SR1				2.5	10/24/97	1210		X			X	1	X	13

13021

SCREENED FOR RADIOACTIVITY

COOLER TEMPERATURE WHEN RECEIVED 4 °C

ORIGINAL

Sampler (signature): Kenneth Seaman

Sampler (signature):

Special Instructions:

Relinquished By:	Date/Time	Received By:	Date/Time	Condition of Shipping Container:	Ice Present in Container:
1. (signature)	10/27/97 13:35	(signature)	10/28/97 10:20	Good ☐ Fair ☐ Poor ☐	Yes ☐ No ☐
Relinquished By: 2. (signature)	Date/Time	Received By: (signature)	Date/Time	Comments:	

061996 Form WCI-OP1

APPENDIX D

Quality Control Evaluation Report

Memorandum

Burns & McDonnell	Waste Consultants, Inc.

Date: December 12, 1997

To: Denise Kazmierczak

From: Christine Rice

Re: QA/QC of Analytical Data
Project Number. 94-498-4-004-05 (ARMCORFI)

Soil and air cassette samples were collected between September 8, 1997, and October 24, 1997. The samples were analyzed by Intertek Testing Services Environmental Laboratory (ITS) of Richardson, Texas, for cadmium and lead by SW-846 Method 3050A/6010B.

The sample results were reviewed for the Level III parameters listed on the attached checklists. The checklist items were examined as recommended by EPA's *National Functional Guidelines for Organic Data Review* (NFGO), 1993, and *National Functional Guidelines for Inorganic Data Review* (NFGI), 1994. The quality assurance/quality control (QA/QC) review results are discussed below.

1. Chain-of-Custody - The chain-of-custody (COC) forms were signed by the relinquisher and receiver.

2. Requested Analyses Completed - All analyses were performed as requested.

3. Holding Times - All samples were analyzed within the required holding times.

4. Sample Preservation Acceptable - No problems were noted with the sample preservation.

5. Laboratory Method Blanks - There were no positive detections of target analytes reported in the method blanks.

6. Field Blanks - The samples of sample delivery group (SDG) D97-10900 were associated with Field Blank 10B1/DP2R and the air samples of D97-12793 were associated with Field Blank FB. No field blank accompanied the field samples of SDG D97-13024. There were no positive detections of target analytes reported in the field blanks.

7. Laboratory Inorganic Duplicates - Laboratory duplicates are typically run on inorganic analyses. A sample is split into two portions and analyzed separately. The results of these two portions are compared for reproducibility.

   All relative percent differences (RPDs) were within the required QC limit.

8. Matrix Spike/Matrix Spike Duplicates (MS/MSD) for Inorganics - MS/MSDs are typically run on inorganic analyses. A known amount of an analyte is added (spiked) to two portions of the same sample. The results of these two portions are compared against each other for reproducibility. They are also compared against the unspiked portion of the

sample for the recovery of the spike. The results listed below were not within the guidelines.

ITS performed a MS/MSD analysis on Sample 10B3/DP2 (QC Batch Number AC200-22) and associated it with the field samples of SDG D97-10900. The cadmium MS and MSD percent recoveries (RECs) were 38.7 and 36.3 percent, respectively. These RECs fell below the QC minimum of 75 percent. All detected and undetected cadmium results in the associated samples were qualified as estimated (J*). In addition, the MS and MSD RECs for lead were 58 and 38 percent, respectively. These RECs fell below the QC minimum of 75 percent. The lead MS/MSD RPD was 41.7 percent, which exceeded the QC limit of 25 percent. All detected and undetected lead results in the associated samples were qualified as estimated (J*).

The following field samples were associated with the MS/MSD performed on Sample 10CF1/SR1 (QC Batch AC266-20 of SDG D97-13024): 10CF1/SR1, 10CF1/SR1D, 10CF2/SR1, 10CF3/SR1, 10CF4/SR1, 10CF6/SR1, 10CF7/SR1, 10CF8/SR1, 10CF9/SR1, and 10CF10/SR1. For this MS/MSD, the lead spike amount was less than one-fourth the original sample concentration; therefore, no conclusion could be made about the accuracy and/or precision of the lead analyses of the associated samples based upon the MS/MSD results.

ITS performed a MS/MSD analysis on Sample 10CF5/SR1 (QC Batch Number AC266-47 of SDG D97-13024) and associated it with Sample 10CF5/SR1. The cadmium MS and MSD RECs were 72.7 and 71.1 percent, respectively, which fell below the 75 percent QC minimum. Therefore, the cadmium result for associated Sample 10CF5/SR1 was qualified as estimated (J*). In addition, the lead spike amount was less than one-fourth the original sample concentration; therefore, no conclusion could be made about the accuracy and/or precision of the lead analysis of Sample 10CF5/SR1 based upon the MS/MSD results.

9. Laboratory Control Samples (LCS) - The LCS contains a matrix similar to that of the sample which has been spiked with known concentrations of target analytes. The LCS is analyzed by the same method as the samples. As a measure of accuracy, the results of this sample are compared against the known analyte concentrations in the spike to determine REC. The purpose of the LCS analysis is to determine the performance of the laboratory with respect to analyte recovery, independent of field sample matrix interferences. All LCS RECs were within the required QC limits.

10. Field Duplicates - Field duplicate results provide information on the ability to reproduce field results and account for error introduced from handling, shipping, storage, preparation, and analysis of field samples. Two sets of field duplicates were collected during this sampling event. Since there are no specific USEPA guidelines for qualifying

data from field duplicate results, BMWCI has applied the QC limits for inorganic duplicate analyses to the field duplicates:

- Was the same compound detected in both samples?
- Was the RPD less than 35 percent for soil samples?
- For analytes where one of the results was less than five times its detection limit, the results should be within plus or minus two times the detection limit of each other; this criterion is termed the "sensitivity test."

The following positive detections were found:

Field Duplicate Pair 10B4/DP1 // 10B4/DP1D

Parameter	10B4/DP1	10B4/DP1D	Meets QC Criteria
Cadmium	6.24 mg/kg J*	8.28 mg/kg J*	Yes (RPD=28%)
Lead	484 mg/kg J*	1000 mg/kg J*	No (RPD=70%)

Field Duplicate Pair 10CF1/SR1 // 10CF1/SR1D

Parameter	10CF1/SR1	10CF1/SR1D	Meets QC Criteria
Cadmium	15.7 mg/kg	21 mg/kg	Yes (RPD=28.9%)
Lead	983 mg/kg	747 mg/kg	Yes (RPD=27.3%)

The lead detections of field duplicate Pair 10B4/DP1 // 10B4/DP1D had an RPD of 70 percent, which was greater than the 35 percent QC criteria. With this exception, the field duplicate results were adequately replicated.

11. Detection Limits - Detection limits were not required to be elevated.

12. Conclusion - No data were qualified as unusable as a result of the QA/QC data review. As such, the results of this review indicate that the data are valid for use (as qualified) in reporting the results of this investigation.

Attachments

Inorganic Data Validation Checklist

SDG No.: D97-10900
Project Name: ARMCORFI
Project No.: 94-498-4-005
Site:
Laboratory: ITS
Analysis Type: Cadmium, lead

Instructions:

1. Initial and date this form at the start and end of review for this SDG.
2. Place a check mark in the "NA" column when the review item was not applicable.
3. When review of a checklist item is complete, place a check mark in the "Reviewed" column.
4. Place an "NS" designation in the "Reviewed" column when applicable data were not supplied.
5. Place a check mark or an "NR" in the "Qualified" column if related data did or did not require qualification, respectively.
6. See "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994, for validation purposes.
7. Level IV review is generally performed on 5-10% of all sample results; actual percentage is project specific.
8. Place a check mark in the box at the beginning of the Level IV section if no associated raw data were reviewed.

	NA	Reviewed	Qualified	Comments
Level III Review Item				
Signed Chain-of-Custody Available		✓	NR	
Requested Analyses Completed		✓	NR	
Holding Times Met		✓	NR	
Sample Preservation Acceptable		✓	NR	
Laboratory Method Blank Results		✓	NR	
Field Blank Results		✓	NR	
Laboratory Control Sample Results		✓	NR	
Duplicate Sample Results		✓	NR	
Matrix Spike Results		✓	NR	
Field Duplicates		✓	NR	
Detection Limits		✓	NR	
Level IV Review Item	☐ = Summary Sheets Only			
Initial Calibrations				
Initial/Continuing Calibration Verification				
ICP Interference Check Sample Results				
ICP Serial Dilution				
Enhanced Level IV Review Item				
Furnace Atomic Absorption QC				
Sample Result Verification				

Date Started/ Reviewer: 10-2-97 C. Rice
Date Completed/ Reviewer: 10-2-97 C. Rice

Inorganic Data Validation Checklist

SDG No.:	D97-13024	Site:	Sumo 10
Project Name:	ARMCRF1	Laboratory:	ITS
Project No.:	94-498-4-004-05	Analysis Type:	Pb, Cd

Instructions:

1. Initial and date this form at the start and end of review for this SDG.
2. Place a check mark in the "NA" column when the review item was not applicable.
3. When review of a checklist item is complete, place a check mark in the "Reviewed" column.
4. Place an "NS" designation in the "Reviewed" column when applicable data were not supplied.
5. Place a check mark or an "NR" in the "Qualified" column if related data did or did not require qualification, respectively.
6. See "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994, for validation purposes.
7. Level IV review is generally performed on 5-10% of all sample results; actual percentage is project specific.
8. Place a check mark in the box at the beginning of the Level IV section if no associated raw data were reviewed.

	NA	Reviewed	Qualified	Comments
Level III Review Item				
Signed Chain-of-Custody Available		✓	NR	
Requested Analyses Completed		✓	✓	Cd not supplied 10CF1* 10CF10
Holding Times Met		✓	NR	
Sample Preservation Acceptable		✓	NR	
Laboratory Method Blank Results		✓	NR	
Field Blank Results	✓			
Laboratory Control Sample Results		✓	NR	
Duplicate Sample Results		✓	NR	
Matrix Spike Results		✓	✓	Cd 10CF5/SR1 J* Pb low spiked - both batches
Field Duplicates		✓	NR	10CF1/SR1 + 10CF1/SR1D
Detection Limits		✓	NR	
Level IV Review Item	☐ = Summary Sheets Only			
Initial Calibrations				
Initial/Continuing Calibration Verification				
ICP Interference Check Sample Results				
ICP Serial Dilution				
Enhanced Level IV Review Item				
Furnace Atomic Absorption QC				
Sample Result Verification				

Date Started/ Reviewer:	11-13-97/Shelton	Date Completed/ Reviewer:	11-13-97/Shelton

Inorganic Data Validation Checklist

SDG No.:	D97-12793	Site:	SWMU 10
Project Name:	ARMORFI	Laboratory:	ITS
Project No.:	94-498-4-004-05	Analysis Type:	Cd, Pb

Instructions:

A.- Glasses PPE

1. Initial and date this form at the start and end of review for this SDG.
2. Place a check mark in the "NA" column when the review item was not applicable.
3. When review of a checklist item is complete, place a check mark in the "Reviewed" column.
4. Place an "NS" designation in the "Reviewed" column when applicable data were not supplied.
5. Place a check mark or an "NR" in the "Qualified" column if related data did or did not require qualification, respectively.
6. See "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review," February 1994, for validation purposes.
7. Level IV review is generally performed on 5-10% of all sample results; actual percentage is project specific.
8. Place a check mark in the box at the beginning of the Level IV section if no associated raw data were reviewed.

	NA	Reviewed	Qualified	Comments
Level III Review Item				
Signed Chain-of-Custody Available		✓	NR	
Requested Analyses Completed		✓	NR	
Holding Times Met		✓	NR	
Sample Preservation Acceptable		✓	NR	
Laboratory Method Blank Results		✓	NR	
Field Blank Results		✓	NR	
Laboratory Control Sample Results		✓	NR	
Duplicate Sample Results	✓			
Matrix Spike Results		✓	NR	used BS/BSD
Field Duplicates	✓			
Detection Limits		✓	NR	
Level IV Review Item	☐ = Summary Sheets Only			
Initial Calibrations				
Initial/Continuing Calibration Verification				
ICP Interference Check Sample Results				
ICP Serial Dilution				
Enhanced Level IV Review Item				
Furnace Atomic Absorption QC				
Sample Result Verification				

Date Started/ Reviewer: 11/13/97/Shelton

Date Completed/ Reviewer: 11/13/97/Shelton

APPENDIX E

Analytical Laboratory Data

Sample Delivery Group
D97-10900

Received 9-19-97
Sharon Shelton

ITS Intertek Testing Services
Environmental Laboratories

DATE RECEIVED: 9-Sep-1997 REPORT NUMBER: D97-10900
REPORT DATE: 18-Sep-1997

SAMPLE SUBMITTED BY : Burns and McDonnell Waste Consultants, Inc.
ADDRESS : 9400 Ward Parkway
Kansas City, MO 64114
ATTENTION : Ms. Sharon Shelton
PROJECT : 94-498-4-03 ARMCORFI
DATE SAMPLED : 8-Sep-1997

CASE NARRATIVE COMMENTS:

The results were reported on a dry weight basis, having been corrected for total solids.

No issues were noted during the sample analysis of this job.

Please refer to the attached case narrative summary for sample identifications, and analytical requests.

If you have any questions, please call Mr. Keith Partin at (972) 238-5591.

Amy Pence
Data Review/QC

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

ITS Intertek Testing Services
Environmental Laboratories

JOB ID : D97-10900
CUSTOMER : Burns & McDonnell
PROJECT : 94-498-4-004-03 ARMCORFI

SAMPLE ID : D97-10900-1 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B3#DP1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

SAMPLE ID : D97-10900-2 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B3#DP2

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

SAMPLE ID : D97-10900-3 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B3#DP2MS

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22

SAMPLE ID : D97-10900-4 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B3#DP2MSD

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

JOB ID : D97-10900
CUSTOMER : Burns & McDonnell
PROJECT : 94-498-4-004-03 ARMCORFI

SAMPLE ID : D97-10900-5 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B3#DP3

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	15-SEP-1997	214054A

SAMPLE ID : D97-10900-6 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B2#DP1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

SAMPLE ID : D97-10900-7 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B2#DP2

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

SAMPLE ID : D97-10900-8 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B2#DP3

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

JOB ID : D97-10900
CUSTOMER : Burns & McDonnell
PROJECT : 94-498-4-004-03 ARMCORFI

SAMPLE ID : D97-10900-9 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B1#DP1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

SAMPLE ID : D97-10900-10 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B1#DP2

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

SAMPLE ID : D97-10900-11 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B1#DP2R

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_TADLP /1	CEL	15-SEP-1997	GAY	15-SEP-1997	AC200-84
M_PB_TADLP /1	CEL	15-SEP-1997	GAY	15-SEP-1997	AC200-84

SAMPLE ID : D97-10900-12 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B4#DP1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

JOB ID : D97-10900
CUSTOMER : Burns & McDonnell
PROJECT : 94-498-4-004-03 ARMCORFI

SAMPLE ID : D97-10900-13 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B4#DP1D

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214054A

SAMPLE ID : D97-10900-14 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B4#DP2

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214055B

SAMPLE ID : D97-10900-15 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B4#DP3

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214055B

SAMPLE ID : D97-10900-16 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B5#DP1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214055B

Intertek Testing Services NA Inc.
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Telephone (972) 238-5591 Fax (972) 238-5592

JOB ID : D97-10900
CUSTOMER : Burns & McDonnell
PROJECT : 94-498-4-004-03 ARMCORFI

SAMPLE ID : D97-10900-17 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B5#DP2

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214055B

SAMPLE ID : D97-10900-18 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B5#DP3

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214055B

SAMPLE ID : D97-10900-19 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B6#DP1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214055B
SOLID_TPER /2			RMC	16-SEP-1997	214055B

SAMPLE ID : D97-10900-20 DATE SAMPLED : 8-SEP-1997
ID MARKS : 10B6#DP2

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214055B

Intertek Testing Services NA Inc.
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Telephone (972) 238-5591 Fax (972) 238-5592

JOB ID : D97-10900
CUSTOMER : Burns & McDonnell
PROJECT : 94-498-4-004-03 ARMCORFI

SAMPLE ID : D97-10900-21 DATE SAMPLED : 8-SEP-1997
ID MARKS : 1086#DP3

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
SOLID_TPER /1			RMC	16-SEP-1997	214055B

SAMPLE ID : D97-10900-22 DATE SAMPLED : 9-SEP-1997
ID MARKS : LABQC MB

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22
M_PB_THPSP /1	CEL	10-SEP-1997	GAY	10-SEP-1997	AC200-22

SAMPLE ID : D97-10900-23 DATE SAMPLED : 9-SEP-1997
ID MARKS : LABQC MB

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_TADLP /1	CEL	15-SEP-1997	GAY	15-SEP-1997	AC200-84
M_PB_TADLP /1	CEL	15-SEP-1997	GAY	15-SEP-1997	AC200-84

ANALYSIS	DESCRIPTION
M_CD_THPSI	Cadmium, Total, Hot Plate, Solid, by ICP
M_PB_THPSP	Lead, Acid Digestion, Hot Plate, PE, Solid
SOLID_TPER	Total Solids, Soil/Sludge, %
M_CD_TADLP	Cadmium, Total, Hot Plate, Liquid, by PE-ICP
M_PB_TADLP	Lead, Total, Hot Plate, Liquid, by PE-ICP

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

ITS Intertek Testing Services
Environmental Laboratories

DATE RECEIVED : 9-SEP-1997

REPORT NUMBER : D97-10900
REPORT DATE : 18-SEP-1997

SAMPLE SUBMITTED BY : Burns & McDonnell
ADDRESS : 4800 East 63rd Street
: Kansas City, MO 64130
ATTENTION : Ms. Sharon Shelton
PROJECT : 94-498-4-004-03 ARMCORFI

Included in this data package are the analytical results for the sample group which you have submitted to Intertek Testing Services for analysis.

The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Any deviations from these protocols or observations of interest are detailed in an accompanying Case Narrative.

If you have any questions regarding this report and its associated materials please call your Project Manager at (214) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin Jeffus
General Manager

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

ITS Intertek Testing Services
Environmental Laboratories

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-1
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B3#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.56	18.0 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.560	1080 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-1
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B3#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	89.2 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-2
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B3#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS				
TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.59	11.2 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.589	226 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-2
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B3#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	84.8 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-3
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B3#DP2MS
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.50	28.9 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.500	250 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-4
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B3#DP2MSD
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.50	27.7 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.500	230 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-5
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B3#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.66	0.46 mg/Kg	J
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.660	13.6 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-5
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B3#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	75.8 %	

Analyzed using ASTM D2216 mod. on 15-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-6
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B2#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.53	5.79 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.529	306 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-6
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B2#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	94.5 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-7
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B2#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.54	3.84 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.537	107 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-7
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B2#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	93.1 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-8
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B2#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.54	0.28 mg/Kg	J
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.642	13.7 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-8
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B2#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	77.9 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-9
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B1#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.56	5.43 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.556	188 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-9
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B1#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	89.9 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-10
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B1#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.65	0.30 mg/Kg	J
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.646	12.6 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-10
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B1#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	77.3 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-11
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B1#DP2R
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER: -	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Liquid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.0050	< 0.0050 mg/L	U
Prepared using EPA 3010 on 15-SEP-1997 by CEL Analyzed using EPA 6010A on 15-SEP-1997 by GAY QC Batch No : AC200-84 Method Factor : 1				
Lead	1	0.0030	< 0.0030 mg/L	U
Prepared using EPA 3010 on 15-SEP-1997 by CEL Analyzed using EPA 6010A on 15-SEP-1997 by GAY QC Batch No : AC200-84 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-12
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B4#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.57	6.24 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.569	484 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-12
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B4#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	87.8 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-13
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B4#DP1D
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.56	8.28 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.559	1000 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-13
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B4#DP1D
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	89.4 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214054A
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-14
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B4#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.59	1.84 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.589	56.1 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-14
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B4#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	85.0 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214055B
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-15
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B4#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.64	0.27 mg/Kg	J
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.643	10.8 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-15
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B4#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	77.8 %	

' Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214055B
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-16
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B5#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.58	16.8 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.577	858 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-16
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B5#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	86.6 %	

' Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214055B
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-17
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B5#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.57	4.70 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.572	698 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-17
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B5#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	87.4 %	

Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214055B
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-18
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B5#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.66	0.61 mg/Kg	J
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.663	13.1 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-18
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B5#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	75.4 %	

' Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214055B
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-19
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B6#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS				
TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.56	22.3 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.557	1150 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-19
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B6#DP1
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES				
TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	91.7 %	
Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC QC Batch No : 214055B Method Factor : 1				
Total Solids		0.01	89.7 %	
Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC QC Batch No : 214055B Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-20
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B6#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS				
TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.66	11.3 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.664	265 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

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Environmental Laboratories

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-20
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B6#DP2
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	75.3 %	

' Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214055B
Method Factor : 1

Applicable results are reported on dry weight basis.

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DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-21
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B6#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.66	0.63 mg/Kg	J
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.664	24.8 mg/Kg	
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-21
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: 10B6#DP3
DATE SAMPLED: 8-SEP-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	75.3 %	

' Analyzed using ASTM D2216 mod. on 16-SEP-1997 by RMC
QC Batch No : 214055B
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-22
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: LABQC
DATE SAMPLED: 9-SEP-1997	: MB
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.50	< 0.50 mg/Kg	U
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				
Lead	1	0.500	< 0.500 mg/Kg	U
Prepared using EPA 3050 on 10-SEP-1997 by CEL Analyzed using EPA 6010A on 10-SEP-1997 by GAY QC Batch No : AC200-22 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 9-SEP-1997	REPORT NUMBER: D97-10900-23
REPORT DATE: 18-SEP-1997 08:35:05.31	ID MARKS: LABQC
DATE SAMPLED: 9-SEP-1997	: MB
PURCHASE ORDER:	PROJECT: 94-498-4-004-03 ARMCORFI
SAMPLE MATRIX: Liquid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.0050	< 0.0050 mg/L	U
Prepared using EPA 3010 on 15-SEP-1997 by CEL Analyzed using EPA 6010A on 15-SEP-1997 by GAY QC Batch No : AC200-84 Method Factor : 1				
Lead	1	0.0030	< 0.0030 mg/L	U
Prepared using EPA 3010 on 15-SEP-1997 by CEL Analyzed using EPA 6010A on 15-SEP-1997 by GAY QC Batch No : AC200-84 Method Factor : 1				

Applicable results are reported on dry weight basis.

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REPORT DATE : 18-SEP-1997 REPORT NUMBER : D97-10900

SAMPLE SUBMITTED BY : Burns & McDonnell
ATTENTION : Ms. Sharon Shelton

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Cadmium	Cadmium	Lead	Lead
BATCH NO.	AC200-84	AC200-22	AC200-84	AC200-22
LCS LOT NO.	AB300-100	AB300-97	AB300-100	AB300-97
PREP METHOD	EPA 3010	EPA 3050	EPA 3010	EPA 3050
PREPARED BY	CEL	CEL	CEL	CEL
ANALYSIS METHOD	EPA 6010A	EPA 6010A	EPA 6010A	EPA 6010A
ANALYZED BY	GAY	GAY	GAY	GAY
UNITS	mg/L	mg/Kg	mg/L	mg/Kg
METHOD BLANK	< 0.00500	< 0.500	< 0.00300	< 0.500
SPIKE LEVEL	0.500	50.0	1.00	100
SPK REC LIMITS	80.0 - 120	75.0 - 125	80.0 - 120	75.0 - 125
SPK RPD LIMITS	20.0	25.0	20.0	25.0
MS RESULT	0.483	28.9	0.971	250
MS RECOVERY %	96.6	38.7 B	97.1	58.0 B
MSD RESULT	0.473	27.7	0.961	230
MSD RECOVERY %	94.6	36.3 B	96.1	38.0 B
MS/MSD RPD %	2.09	6.40 B	1.04	41.7 B
BS RESULT	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA
DUP RPD LIMITS	---	25.0	---	25.0
DUPLICATE RPD %	NC	18.7	NC	3.53
LCS LEVEL	0.500	50.0	1.00	100
LCS REC LIMITS	80.0 - 120	75.0 - 125	80.0 - 120	75.0 - 125
LCS RESULT	0.511	47.7	1.02	95.0
LCS RECOVERY %	102	95.4	102	95.0
SPIKE SAMPLE ID	11050-1	10900-2	11050-1	10900-2
SAMPLE VALUE	< 0.00500	9.54	< 0.00300	192
DUP SAMPLE ID	11050-1	10900-2	11050-1	10900-2
DUP SAMPLE VAL/1	---	7.91	---	199
DUP SAMPLE VAL/2	---	9.54	---	192

NA Not applicable
NC Not calculable
_B Not applicable due to matrix interference in the QC Sample.

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Waste Consultants, Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: ITS
Address: 1089 E. Collins Blvd.
City/State/Zip: Richardson, TX 75081
Telephone: (972) 238-5591

Document Control No.:

Lab. Reference No. or Episode No.: ORIGINAL

Attention: Sharon Shelton

Project Number: 94-458-4-004-03 Project Name: ARMCO #1

Site, Group, or SWMU Name: SWMU 10

Sample Number		Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix					Number of Containers	Analysis: Cadmium, Lead	Remarks
Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas	Composite	Grab			
10B3	DP1			0	2	9/8/97	1305		X		X	X	1	X	10900-1
10B3	DP2			2	4	9/8/97	1310		X		X	X	1	X	2
10B3	DP2MS			2	4	9/8/97	1310		X		X	X	1	X	3
10B3	DP2MSD			2	4	9/8/97	1310		X		X	X	1	X	4
10B3	DP3			5	8	9/8/97	1325		X		X	X	1	X	5
10B2	DP1			0	2	9/8/97	1340		X		X	X	1	X	6
10B2	DP2			2	4	9/8/97	1345		X		X		1	X	7
10B2	DP3			4	8	9/8/97	1350		X		X		1	X	8
10B1	DP1			0	4	9/8/97	1406		X		X		1	X	9
10B1	DP2			4	8	9/8/97	1412		X		X		1	X	10
10B1	DP2R			—	—	9/8/97	1425	X	X			X	1	X	11
10B4	DP1			0	2	9/8/97	1450		X		X		1	X	12
10B4	DP1D			0	2	9/8/97	1450		X		X		1	X	13
10B4	DP2			2	4	9/8/97	1455		X		X		1	X	14
10B4	DP3			4	8	9/8/97	1505		X		X		1	X	15

Sampler (signature): [signature]
Sampler (signature): Ryan Hall

COOLER TEMPERATURE WHEN RECEIVED: 4 °C

Special Instructions: SCREENED FOR RADIOACTIVITY

Relinquished By:	Date/Time	Received By:	Date/Time
1. [signature] (signature):	9/8/97 1640	[signature] (signature):	9-9-97 0950
Relinquished By:	Date/Time	Received By:	Date/Time
2. (signature):		(signature):	

Condition of Shipping Container: Good ☑ Fair ☐ Poor ☐
Ice Present in Container: Yes ☑ No ☐

Comments:

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Waste Consultants, Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: ITS
Address: 1089 E. Collins Blvd.
City/State/Zip: Richardson TX 75081
Telephone: (972) 238-5591
Attention: Sharon Shelton

Document Control No.:
Lab. Reference No. or Episode No.:

Project Number: 94-498Y-004-03
Project Name: ARMCO RFI
Site, Group, or SWMU Name: SWMU 10

Sample Number		Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix					Number of Containers	Analysis: Cadmium, Lead	Remarks
Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas	Composite	Grab			
10B5	DP1			0	2	9/8/97	1515		X		X		1	X	10900-16
10B5	DP2			2	4	9/8/97	1520		X		X		1	X	17
10B5	DP3			4	8	9/8/97	1525		X		X		1	X	18
10B6	DP1			0	2	9/8/97	1530		X		X		1	X	19
10B6	DP2			2	4	9/8/97	1535		X		X		1	X	20
10B6	DP3			4	8	9/8/97	1540		X		X		1	X	21

SCREENED FOR RADIOACTIVITY

COOLER TEMPERATURE WHEN RECEIVED 2 °C

Sampler (signature): Kenneth Simmons
Sampler (signature): Lynn Hall

Special Instructions:

Relinquished By:	Date/Time	Received By:	Date/Time
1. Kenneth Simmons (signature):	9/8/97 1640	B. Wilson (signature):	9-9-97 0950
Relinquished By:	Date/Time	Received By:	Date/Time
2. (signature):		(signature):	

Condition of Shipping Container: Good [✓] Fair [ ] Poor [ ]
Ice Present in Container: Yes [✓] No [ ]
Comments:

ITS Intertek Testing Services
Environmental Laboratories

SAMPLE PRESERVATION INFORMATION SHEET

Preserved By	KRH	**JOB NUMBER**	10900
Date	9-9-97		
Time		Client Name	Burns + McDonnell

Sample No.	Container Type	Apparent Volume (mLs)	Initial pH* (20± 2° C)	Final pH	Preservative Added	Filtration	Comments
10900-11	1P	1L	<2	<2	3,1		metals

KRH

pH Duplicate (maximum difference = 0.2): Sample No. 10900-11	<2
pH LCS (ph = 7.0 ± 0.2): Lot Number: 5041	7.0

PRESERVATION / FILTRATION KEY

1 = Pre-preserved
2 = H_2SO_4 to pH<2
3 = HNO_3 to pH<2
4 = HCl to pH<2
5 = NaOH to pH>12
6 = $Na_2S_2O_3$ (0.008%)
7 = 2 mL Zn OAc/NaOH to pH>12
8 = No Preservative Required

F = Chain-of-Custody indicates sample was filtered in the field
L = Sample filtered (0.45 pm) in the laboratory before preservation

* The initial pH balance is determined in accordance with EPA methods 150.1 / SW-846 9040 using a sample of aliquot which has been adjusted to 20 ± 2°C

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Sample Delivery Group
D97-12793

Received 10/27/97 Sharon Shelton

ITS Intertek Testing Services
Environmental Laboratories

DATE RECEIVED: 22-Oct-1997 REPORT NUMBER: D97-12793
REPORT DATE: 23-OCT-1997

SAMPLE SUBMITTED BY : Burns and McDonnell Waste Consultants, Inc.
ADDRESS : 9400 Ward Parkway
Kansas City, MO 64114
ATTENTION : Mr. Sharon Shelton
PROJECT : 94-498-4-004-05 ARMCORFI
DATE SAMPLED : 21-Sep-1997

CASE NARRATIVE COMMENTS:

The results were reported on a dry weight basis, having been corrected for total solids.

No issues were noted during the sample analysis of this job.

Please refer to the attached case narrative summary for sample identifications, and analytical requests.

If you have any questions, please call Mr. Keith Partin at (972) 238-5591.

Amy Pence
Data Review/QC

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

ITS Intertek Testing Services
Environmental Laboratories

JOB ID : D97-12793
CUSTOMER : Burns & McDonnell Waste Consultants, Inc.
PROJECT : 94-498-4-004-05 ARMCORFI

SAMPLE ID : D97-12793-1 DATE SAMPLED : 21-OCT-1997
ID MARKS : FB#

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_T_A_I /1	CEL	23-OCT-1997	GAY	23-OCT-1997	AC263-45
M_PB_T_A_I /1	CEL	23-OCT-1997	GAY	23-OCT-1997	AC263-45

SAMPLE ID : D97-12793-2 DATE SAMPLED : 21-OCT-1997
ID MARKS : A1#27149

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_T_A_I /1	CEL	23-OCT-1997	GAY	23-OCT-1997	AC263-45
M_PB_T_A_I /1	CEL	23-OCT-1997	GAY	23-OCT-1997	AC263-45

SAMPLE ID : D97-12793-3 DATE SAMPLED : 21-OCT-1997
ID MARKS : P1#27151

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_T_A_I /1	CEL	23-OCT-1997	GAY	23-OCT-1997	AC263-45
M_PB_T_A_I /1	CEL	23-OCT-1997	GAY	23-OCT-1997	AC263-45

ANALYSIS	DESCRIPTION
M_CD_T_A_I	Cadmium, Total, Air, by ICP
M_PB_T_A_I	Lead, Total, Air, by ICP

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Telephone (972) 238-5591 Fax (972) 238-5592

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Environmental Laboratories

DATE RECEIVED : 22-OCT-1997

REPORT NUMBER : D97-12793
REPORT DATE : 23-OCT-1997

SAMPLE SUBMITTED BY : Burns & McDonnell Waste Consultants, Inc.
ADDRESS : 9400 Ward Parkway
: Kansas City, MO 64114
ATTENTION : Sharon Shelton
PROJECT : 94-498-4-004-05 ARMCORFI

Included in this data package are the analytical results for the sample group which you have submitted to Intertek Testing Services for analysis.

The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Any deviations from these protocols or observations of interest are detailed in an accompanying Case Narrative.

If you have any questions regarding this report and its associated materials please call your Project Manager at (214) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin Jeffus
General Manager

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

Intertek Testing Services
Environmental Laboratories

DATE RECEIVED: 22-OCT-1997	REPORT NUMBER: D97-12793-1
REPORT DATE: 23-OCT-1997 18:28:23.68	ID MARKS: FB#
DATE SAMPLED: 21-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-05 ARMCORFI
SAMPLE MATRIX: Air	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	1.0	< 1.0 µg/m³	U
Prepared using EPA 3050A on 23-OCT-1997 by CEL Analyzed using EPA 6010B on 23-OCT-1997 by GAY QC Batch No : AC263-45 Method Factor : 1				
Lead	1	1.0	< 1.0 µg/m³	U
Prepared using EPA 3050A on 23-OCT-1997 by CEL Analyzed using EPA 6010B on 23-OCT-1997 by GAY QC Batch No : AC263-45 Method Factor : 1				

Applicable results are reported on dry weight basis.

Intertek Testing Services NA Inc.
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Telephone (972) 238-5591 Fax (972) 238-5592

DATE RECEIVED: 22-OCT-1997	REPORT NUMBER: D97-12793-2
REPORT DATE: 23-OCT-1997 18:28:23.68	ID MARKS: A1#27149
DATE SAMPLED: 21-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-05 ARMCORFI
SAMPLE MATRIX: Air	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	1.0	< 1.0 µg/m³	U
Prepared using EPA 3050A on 23-OCT-1997 by CEL Analyzed using EPA 6010B on 23-OCT-1997 by GAY QC Batch No : AC263-45 Method Factor : 1				
Lead	1	1.0	< 1.0 µg/m³	U
Prepared using EPA 3050A on 23-OCT-1997 by CEL Analyzed using EPA 6010B on 23-OCT-1997 by GAY QC Batch No : AC263-45 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 22-OCT-1997	REPORT NUMBER: D97-12793-3
REPORT DATE: 23-OCT-1997 18:28:23.68	ID MARKS: P1#27151
DATE SAMPLED: 21-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004-05 ARMCORFI
SAMPLE MATRIX: Air	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	1.0	< 1.0 µg/m³	U
Prepared using EPA 3050A on 23-OCT-1997 by CEL Analyzed using EPA 6010B on 23-OCT-1997 by GAY QC Batch No : AC263-45 Method Factor : 1				
Lead	1	1.0	< 1.0 µg/m³	U
Prepared using EPA 3050A on 23-OCT-1997 by CEL Analyzed using EPA 6010B on 23-OCT-1997 by GAY QC Batch No : AC263-45 Method Factor : 1				

Applicable results are reported on dry weight basis.

ITS Intertek Testing Services
Environmental Laboratories

REPORT DATE : 24-OCT-1997 REPORT NUMBER : D97-12793

SAMPLE SUBMITTED BY : Burns & McDonnell Waste Consultants, Inc.
ATTENTION : Sharon Shelton

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Cadmium	Lead
BATCH NO.	AC263-45	AC263-45
LCS LOT NO.	AC223-03	AC223-03
PREP METHOD	EPA 3050A	EPA 3050A
PREPARED BY	CEL	CEL
ANALYSIS METHOD	EPA 6010B	EPA 6010B
ANALYZED BY	GAY	GAY
UNITS	µg/m³	µg/m³
METHOD BLANK	< 1.00	< 1.00
SPIKE LEVEL	50.0	100
SPK REC LIMITS	75.0 - 125	75.0 - 125
SPK RPD LIMITS	25.0	25.0
MS RESULT	NA	NA
MS RECOVERY %	NA	NA
MSD RESULT	NA	NA
MSD RECOVERY %	NA	NA
MS/MSD RPD %	NA	NA
BS RESULT	51.8	104
BS RECOVERY %	104	104
BSD RESULT	51.5	103
BSD RECOVERY %	103	103
BS/BSD RPD %	0.58	0.97
DUP RPD LIMITS	---	---
DUPLICATE RPD %	NA	NA
LCS LEVEL	50.0	100
LCS REC LIMITS	75.0 - 125	75.0 - 125
LCS RESULT	51.3	102
LCS RECOVERY %	103	102
SPIKE SAMPLE ID	---	---
SAMPLE VALUE	---	---
DUP SAMPLE ID	---	---
DUP SAMPLE VAL/1	---	---
DUP SAMPLE VAL/2	---	---

NA Not applicable

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Waste Consultants, Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: ITS
Address: 1089 E. Collins Blvd.
City/State/Zip: Richardson TX
Telephone: 888-487-5591

Attention: Sharon Shelton

Document Control No.:

Lab. Reference No. or Episode No.:

Project Number: 94-498-4-004-05
Project Name: ARMCO RFI

Site, Group, or SWMU Name: SWMU 10
Sample Time

Sample Number		Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix					Number of Containers	Analysis: Lead	Analysis: Cadmium				Remarks
Sample Point	Sample Designator (Pump #)	Round	Year	From (Start)	To (Stop)	Date	Time (Duration)	Liquid	Solid	Gas	Composite	Grab							
FB	NONE	/		0900	0901	10/21/97	0900		X				1	X	X	12793-1			Pump Flow Rate
A1	27149	/		0900	1815	10/21/97	555		X				1	X	X			2	1.40 l/min.
P1	27151	/		0905	1820	10/21/97	555		X				1	X	X			3	1.39 l/min.

ORIGINAL

Sampler (signature): Kenneth Seamon

Sampler (signature):

Special Instructions: Rush 24 Hour Turnaround

Relinquished By:	Date/Time	Received By:	Date/Time
1. Kenneth Seamon (signature)	10/21/97 1845	(signature)	10-22-97 1100
Relinquished By: 2. (signature)	Date/Time	Received By: (signature)	Date/Time

Condition of Shipping Container: Good ☑ Fair ☐ Poor ☐
Ice Present in Container: Yes ☐ No ☑

Comments:

061996 Form WCI-OP1

Sample Delivery Group
D97-13024

Received 11/11/97 Sharon Shelton

ITS Intertek Testing Services
Environmental Laboratories

DATE RECEIVED: 28-Oct-1997 REPORT NUMBER: D97-13024
REPORT DATE: 10-Nov-1997

SAMPLE SUBMITTED BY : Burns and McDonnell Waste Consultants, Inc.
ADDRESS : 9400 Ward Parkway
Kansas City, MO 64114
ATTENTION : Ms. Sharon Shelton
PROJECT : 94-498-4-004-05 ARMCORFI
DATE SAMPLED : 24-Oct-1997

CASE NARRATIVE COMMENTS:

The results were reported on a dry weight basis, having been corrected for total solids.

No issues were noted during the sample analysis of this job.

Please refer to the attached case narrative summary for sample identifications, and analytical requests.

If you have any questions, please call Mr. Keith Partin at (972) 238-5591.

Amy Pence
Data Review/QC

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

ITS Intertek Testing Services
Environmental Laboratories

JOB ID : D97-13024
CUSTOMER : Burns & McDonnell Waste Consultants, Inc.
PROJECT : 94-498-4-004.05 ARMCORFI

SAMPLE ID : D97-13024-1 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF1#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-2 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF1#SR1D

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-3 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF2#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-4 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF3#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

JOB ID : D97-13024
CUSTOMER : Burns & McDonnell Waste Consultants, Inc.
PROJECT : 94-498-4-004.05 ARMCORFI

SAMPLE ID : D97-13024-5 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF4#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-6 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF5#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /2	CEL	6-NOV-1997	GAY	7-NOV-1997	AC266-47
M_PB_THPSP /2	CEL	6-NOV-1997	GAY	7-NOV-1997	AC266-47
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-7 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF5#SR/MS

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /2	CEL	6-NOV-1997	GAY	7-NOV-1997	AC266-47
M_PB_THPSP /2	CEL	6-NOV-1997	GAY	7-NOV-1997	AC266-47
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-8 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF5#SR/MSD

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /2	CEL	6-NOV-1997	GAY	7-NOV-1997	AC266-47
M_PB_THPSP /2	CEL	6-NOV-1997	GAY	7-NOV-1997	AC266-47
SOLID_TPER /1			JJH	5-NOV-1997	274052

Intertek Testing Services NA Inc.
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JOB ID : D97-13024
CUSTOMER : Burns & McDonnell Waste Consultants, Inc.
PROJECT : 94-498-4-004.05 ARMCORFI

SAMPLE ID : D97-13024-9 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF6#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-10 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF7#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-11 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF8#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-12 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF9#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

JOB ID : D97-13024
CUSTOMER : Burns & McDonnell Waste Consultants, Inc.
PROJECT : 94-498-4-004.05 ARMCORFI

SAMPLE ID : D97-13024-13 DATE SAMPLED : 24-OCT-1997
ID MARKS : 10CF10#SR1

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
SOLID_TPER /1			JJH	5-NOV-1997	274052

SAMPLE ID : D97-13024-14 DATE SAMPLED : 24-OCT-1997
ID MARKS : LABQC# MBLANK

ANALYSIS	PRP	PRP DATE	ANL	ANL DATE	QC BATCH NUMBER
M_CD_THPSI /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20
M_PB_THPSP /1	CEL	4-NOV-1997	GAY	4-NOV-1997	AC266-20

ANALYSIS	DESCRIPTION
M_CD_THPSI	Cadmium, Total, Hot Plate, Solid, by ICP
M_PB_THPSP	Lead, Acid Digestion, Hot Plate, PE, Solid
SOLID_TPER	Total Solids, Soil/Sludge, %

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

ITS Intertek Testing Services
Environmental Laboratories

DATE RECEIVED : 28-OCT-1997

REPORT NUMBER : D97-13024
REPORT DATE : 10-NOV-1997

SAMPLE SUBMITTED BY : Burns & McDonnell Waste Consultants, Inc.
ADDRESS : 9400 Ward Parkway
: Kansas City, MO 64114
ATTENTION : Sharon Shelton
PROJECT : 94-498-4-004.05 ARMCORFI

Included in this data package are the analytical results for the sample group which you have submitted to Intertek Testing Services for analysis.

The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Any deviations from these protocols or observations of interest are detailed in an accompanying Case Narrative.

If you have any questions regarding this report and its associated materials please call your Project Manager at (972) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin Jeffus
General Manager

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

Received 11/19/97
Shaun Shelton
Revision

ITS Intertek Testing Services
Environmental Laboratories

ANALYTICAL REPORT

DATE RECEIVED : 28-OCT-1997

REPORT NUMBER : D97-13024
REPORT DATE : 14-NOV-1997

SAMPLE SUBMITTED BY : Burns & McDonnell Waste Consultants, Inc.
ADDRESS : 9400 Ward Parkway
: Kansas City, MO 64114
ATTENTION : Sharon Shelton
PROJECT : 94-498-4-004.05 ARMCORFI

Included in this data package is the revised report for the sample group which you have recently submitted to Intertek Testing Services for analysis. These results are representative of the samples as received by the laboratory. Please refrain from reproducing this report except in its entirety.

If you have any questions regarding this report please call your Project Manager at (972) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin Jeffus

Martin Jeffus
General Manager

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

Intertek Testing Services
Environmental Laboratories

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-1
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF1#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.57	15.7 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.57	983 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-1
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF1#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORF1
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	87.6 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-2
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF1#SR1D
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.56	21.0 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.56	747 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-2
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF1#SR1D
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	88.9 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-3
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF2#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.66	< 0.66 mg/Kg	U
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.66	131 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-3
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF2#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	76.1 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-4
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF3#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.57	5.16 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.57	208 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-4
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF3#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	88.2 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-5
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF4#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.59	10.5 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.59	602 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-5
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF4#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	84.7 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-6
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF5#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.60	9.82 mg/Kg	
Prepared using EPA 3050A on 6-NOV-1997 by CEL Analyzed using EPA 6010B on 7-NOV-1997 by GAY QC Batch No : AC266-47 Method Factor : 1				
Lead	1	0.60	647 mg/Kg	
Prepared using EPA 3050A on 6-NOV-1997 by CEL Analyzed using EPA 6010B on 7-NOV-1997 by GAY QC Batch No : AC266-47 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-6
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF5#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	82.7 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-7
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF5#SR/MS
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.60	31.4 mg/Kg	
Prepared using EPA 3050A on 6-NOV-1997 by CEL Analyzed using EPA 6010B on 7-NOV-1997 by GAY QC Batch No : AC266-47 Method Factor : 1				
Lead	1	0.60	635 mg/Kg	
Prepared using EPA 3050A on 6-NOV-1997 by CEL Analyzed using EPA 6010B on 7-NOV-1997 by GAY QC Batch No : AC266-47 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-7
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF5#SR/MS
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	83.7 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-8
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF5#SR/MSD
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.60	31.2 mg/Kg	
Prepared using EPA 3050A on 6-NOV-1997 by CEL Analyzed using EPA 6010B on 7-NOV-1997 by GAY QC Batch No : AC266-47 Method Factor : 1				
Lead	1	0.60	584 mg/Kg	
Prepared using EPA 3050A on 6-NOV-1997 by CEL Analyzed using EPA 6010B on 7-NOV-1997 by GAY QC Batch No : AC266-47 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-8
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF5#SR/MSD
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	82.9 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-9
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF6#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.58	35.8 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.58	1940 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-9
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF6#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	86.9 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

Intertek Testing Services
Environmental Laboratories

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-10
REPORT DATE: 14-NOV-1997 10:37:15.35	ID MARKS: 10CF7#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.55	6.90 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.55	389 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-10
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF7#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	90.7 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-11
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF8#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.58	19.2 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.58	1420 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-11
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF8#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	87.0 %	

f Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-12
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF9#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.55	9.67 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.55	515 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-12
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF9#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	90.2 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-13
REPORT DATE: 14-NOV-1997 10:37:15.35	ID MARKS: 10CF10#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.59	10.9 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.59	541 mg/Kg	
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-13
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: 10CF10#SR1
DATE SAMPLED: 24-OCT-1997	:
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

MISCELLANEOUS ANALYSES

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Total Solids		0.01	84.5 %	

Analyzed using ASTM D2216 mod. on 5-NOV-1997 by JJH
QC Batch No : 274052
Method Factor : 1

Applicable results are reported on dry weight basis.

DATE RECEIVED: 28-OCT-1997	REPORT NUMBER: D97-13024-14
REPORT DATE: 10-NOV-1997 16:26:09.31	ID MARKS: LABQC#
DATE SAMPLED. 24-OCT-1997	: MBLANK
PURCHASE ORDER:	PROJECT: 94-498-4-004.05 ARMCORFI
SAMPLE MATRIX: Solid	

TOTAL METALS

TEST REQUESTED	DILUTION FACTOR	DETECTION LIMIT	RESULTS	FLAG
Cadmium	1	0.50	< 0.50 mg/Kg	U
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				
Lead	1	0.50	< 0.50 mg/Kg	U
Prepared using EPA 3050A on 4-NOV-1997 by CEL Analyzed using EPA 6010B on 4-NOV-1997 by GAY QC Batch No : AC266-20 Method Factor : 1				

Applicable results are reported on dry weight basis.

ITS Intertek Testing Services
Environmental Laboratories

REPORT DATE : 10-NOV-1997 REPORT NUMBER : D97-13024

SAMPLE SUBMITTED BY : Burns & McDonnell Waste Consultants, Inc.
ATTENTION : Sharon Shelton

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Cadmium	Cadmium	Lead	Lead
BATCH NO.	AC266-20	AC266-47	AC266-20	AC266-47
LCS LOT NO.	---	AC223-09A,B	---	AC223-09A,B
PREP METHOD	EPA 3050A	EPA 3050A	EPA 3050A	EPA 3050A
PREPARED BY	CEL	CEL	CEL	CEL
ANALYSIS METHOD	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B
ANALYZED BY	GAY	GAY	GAY	GAY
UNITS	mg/Kg	mg/Kg	mg/Kg	mg/Kg
METHOD BLANK	< 0.500	< 0.500	< 0.500	< 0.500
SPIKE LEVEL	50.0	25.0	100	50.0
SPK REC LIMITS	75.0 - 125	75.0 - 125	75.0 - 125	75.0 - 125
SPK RPD LIMITS	25.0	25.0	25.0	25.0
MS RESULT	59.4	26.3	983	532
MS RECOVERY %	91.2	72.7 B	121	6.0 F
MSD RESULT	60.5	25.9	1280	484
MSD RECOVERY %	93.4	71.1 B	418	102 F
MS/MSD RPD %	2.38	2.22 B	110	178 F
BS RESULT	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA
DUP RPD LIMITS	25.0	25.0	25.0	25.0
DUPLICATE RPD %	17.8	18.9	12.2	4.39
LCS LEVEL	50.0	50.0	100	100
LCS REC LIMITS	75.0 - 125	75.0 - 125	75.0 - 125	75.0 - 125
LCS RESULT	51.3	49.1	103	96.8
LCS RECOVERY %	103	98.2	103	96.8
SPIKE SAMPLE ID	13024-1	13024-6	13024-1	13024-6
SAMPLE VALUE	13.8	8.12	862	535
DUP SAMPLE ID	13024-1	13024-6	13024-1	13024-6
DUP SAMPLE VAL/1	16.5	9.81	763	559
DUP SAMPLE VAL/2	13.8	8.12	862	535

NA Not applicable
_B Not applicable due to matrix interference in the QC Sample.
_F Not applicable due to high analyte concentration in the QC sample.

Intertek Testing Services NA Inc.
1089 East Collins Boulevard Richardson, TX 75081
Telephone (972) 238-5591 Fax (972) 238-5592

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Waste Consultants, Inc.
9400 Ward Parkway
Kansas City, Missouri 64114
Phone: (816) 333-8787 Fax: (816) 822-3463

Laboratory: ITS
Address: 1089 E. Collins Blvd.
City/State/Zip: Richardson, TX 75081
Telephone: (888) 487-5591

Attention: Sharon Shelton

Document Control No.:

Lab. Reference No. or Episode No.:

Project Number: 94-4984-004.05 Project Name: ARMCORF1

Site, Group, or SWMU Name: SWMU 10

Sample Number		Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix					Number of Containers	Analysis: Cadmium, Lead	Remarks
Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas	Composite	Grab			
CF1	SR1				2	10/24/97	1015		X			X	1	X	1
CF1	SR1D				2	10/24/97	1020		X			X	1	X	2
CF2	SR1				4	10/24/97	0952		X			X	1	X	3
CF3	SR1				2	10/24/97	1000		X			X	1	X	4
CF4	SR1				2	10/24/97	1025		X			X	1	X	5
CF5	SR1				2.5	10/24/97	1030		X			X	1	X	6
CF5	SR1MS				2.5	10/24/97	1030		X			X	1	X	7
CF5	SR1MSD				2.5	10/24/97	1030		X			X	1	X	8
CF6	SR1				1.5	10/24/97	1035		X			X	1	X	9
CF7	SR1				1.5	10/24/97	1120		X			X	1	X	10
CF8	SR1				2	10/24/97	1130		X			X	1	X	11
CF9	SR1				1.5	10/24/97	1135		X			X	1	X	12
CF10	SR1				2.5	10/24/97	1210		X			X	1	X	13

130211

SCREENED FOR RADIOACTIVITY

COOLER TEMPERATURE WHEN RECEIVED 12.9 °C

Sampler (signature): Kenneth Seminara

Sampler (signature):

Special Instructions:

Relinquished By:	Date/Time	Received By:	Date/Time
1. (signature)	10/27/97 13:31	(signature)	10/28/97 10:00
Relinquished By:	Date/Time	Received By:	Date/Time
2. (signature)		(signature)	

Condition of Shipping Container: Good ☐ Fair ☐ Poor ☐

Ice Present in Container: Yes ☐ No ☐

Comments:

061996 Form WCI-OP1

SAMPLE RECEIVING CHECKLIST / COOLER RECEIPT

Date received 10/28/97

Date Logged In 10/28/97

Coolers Received 1

Job Number 13024

Project QU-498-4-604.05

Received By Amalia Vicuna

Cooler Number(s) _____

Reviewer _____

Cooler Information:

Shipping Carrier and bill number NA

Custody Seals # NA Location _____

Seals Intact? YES NO NA Shipping/Receiving Dates Correct? YES NO

Cooler Condition good Cooler Temp: 4 On ICE? (YES) NO

COC in Plastic? (YES) NO COC Signed/Dated by ITS? (YES) NO

COC Signed by Client? (YES) NO RAD Screen POS (NEG)

All bottles sealed? YES (NO) Bottles Intact? (YES) NO

Labels in good condition? (YES) NO Correct containers used? (YES) NO

COC / Sample Information:

Labels agree w/COC? (YES) NO Correct Preservation? (YES) NO

Sufficient Sample Provided? (YES) NO No bubbles in VOA's? YES NO NA

Received in hold time? (YES) NO Date/Time Sampled? (YES) NO

Short holding parameters flagged / Lab notified YES NO NA

Chain Filled out Correctly / Analysis Specified? (YES) NO

Login Journal Review:

Quote / PP checked for project info? YES NO NA

Correct Customer ID? YES NO Correct Contact? YES NO

Correct Test Codes Used? YES NO Correct TAT Specified? YES NO

APPENDIX F

Photograph Log of Excavation and Paving Activities

Photograph Log of Excavation and Paving Activities
SWMU 10 Excavation and Paving Activities Report
Armco Kansas City Facility

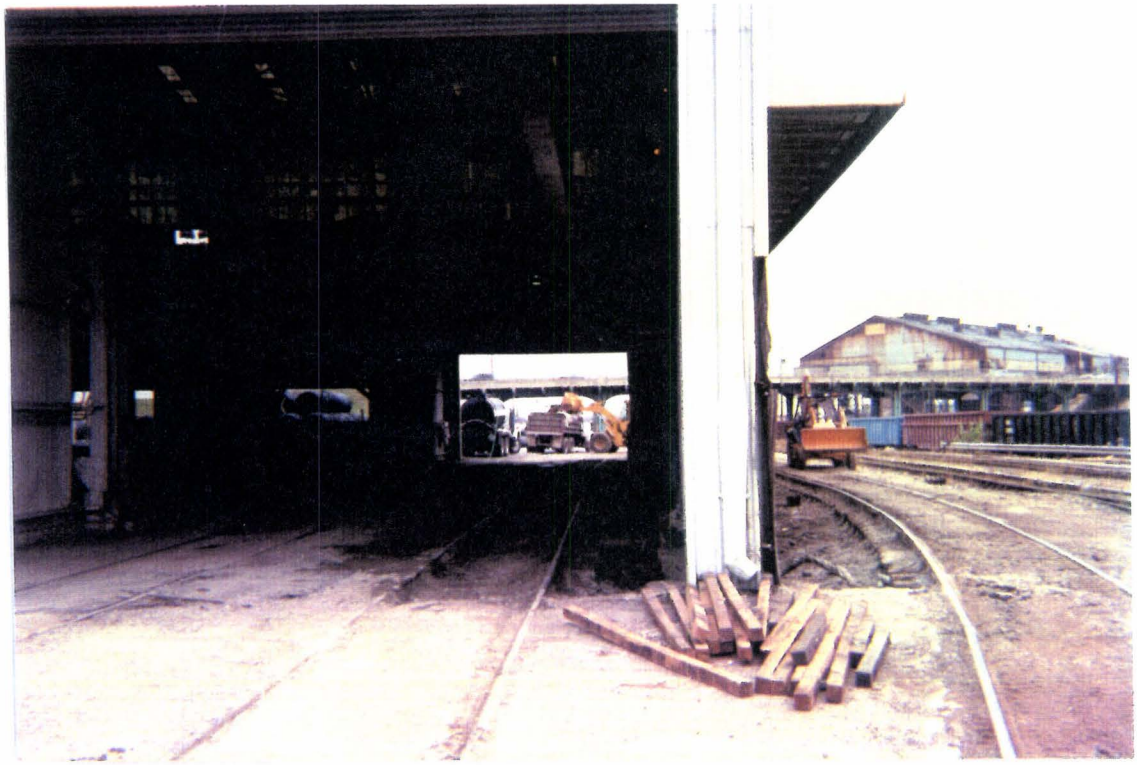

Photo #: 1 Date: 10/22/97
Subject: SWMU 10 EXCAVATION ACTIVITIES
North end of SWMU 10 looking south showing excavation limits.

Photo #: 2 Date: 10/22/97
Subject: SWMU 10 EXCAVATION ACTIVITIES
North end of SWMU 10 looking south outside of building showing excavation limit.

Photograph Log of Excavation and Paving Activities
SWMU 10 Excavation and Paving Activities Report
Armco Kansas City Facility

Photo #: 3 Date: 10/21/97

Subject: SWMU 10 EXCAVATION ACTIVITIES

Central portion of SWMU 10 outside looking north showing excavation activities.

Photo #: 4 Date: 10/22/97

Subject: SWMU 10 EXCAVATION ACTIVITIES

South end of SWMU 10 looking north inside building showing excavation activities.
Deepest portion of excavation is along the wall between the two columns.

Photograph Log of Excavation and Paving Activities
SWMU 10 Excavation and Paving Activities Report
Armco Kansas City Facility

Photo #: 5 Date: 10/22/97

Subject: SWMU 10 EXCAVATION ACTIVITIES
South end of SWMU 10 looking south inside building showing excavation near railroad and dust suppression activities.

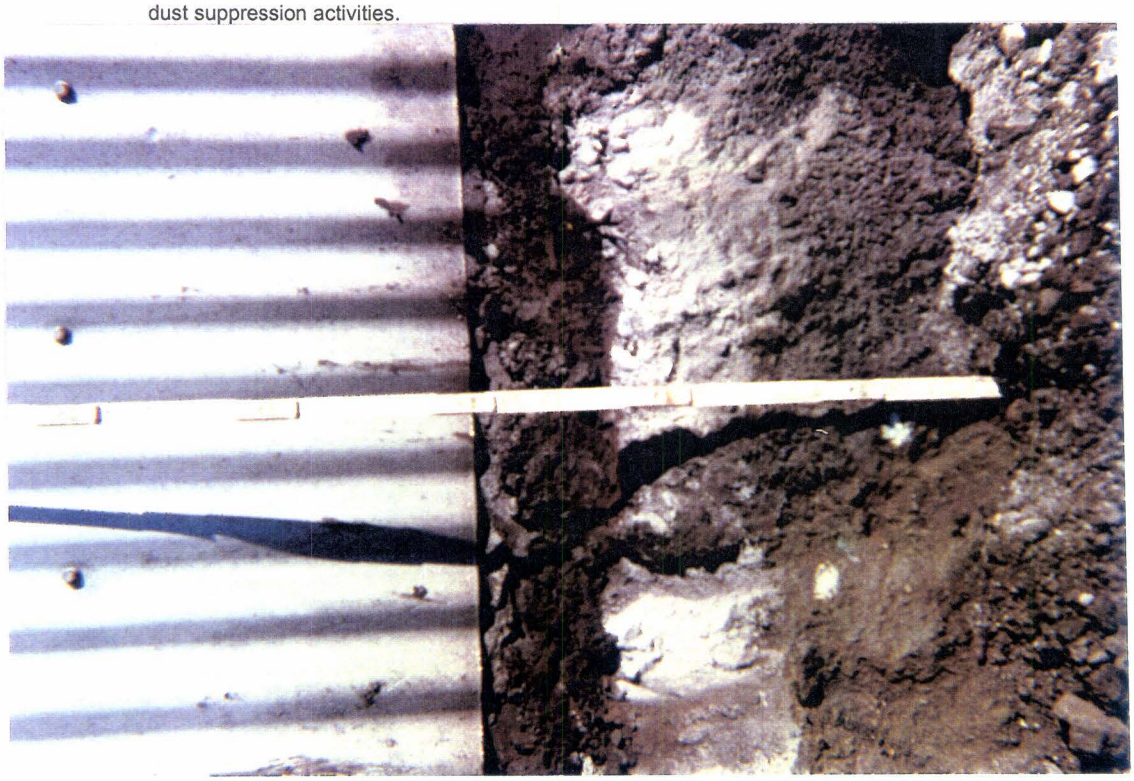

Photo #: 6 Date: 10/21/97

Subject: SWMU 10 EXCAVATION ACTIVITIES
Central portion of SWMU 10 outside looking at west wall, showing stratigraphy.
Note: 0.4 foot brownish-red silt and 0.5 foot gravel above a brown slag and soil layer.

Photograph Log of Excavation and Paving Activities
SWMU 10 Excavation and Paving Activities Report
Armco Kansas City Facility

Photo #: 7 Date: 10/21/97

Subject: SWMU 10 EXCAVATION ACTIVITIES
Central portion of SWMU 10 outside looking north showing excavation and dust suppression activities.

Photo #: 8 Date: 10/24/97

Subject: SWMU 10 EXCAVATION ACTIVITIES
North end of SWMU 10 looking south showing sample locations 10CF3 (center) and 10CF2 (top center)

Photograph Log of Excavation and Paving Activities
SWMU 10 Excavation and Paving Activities Report
Armco Kansas City Facility

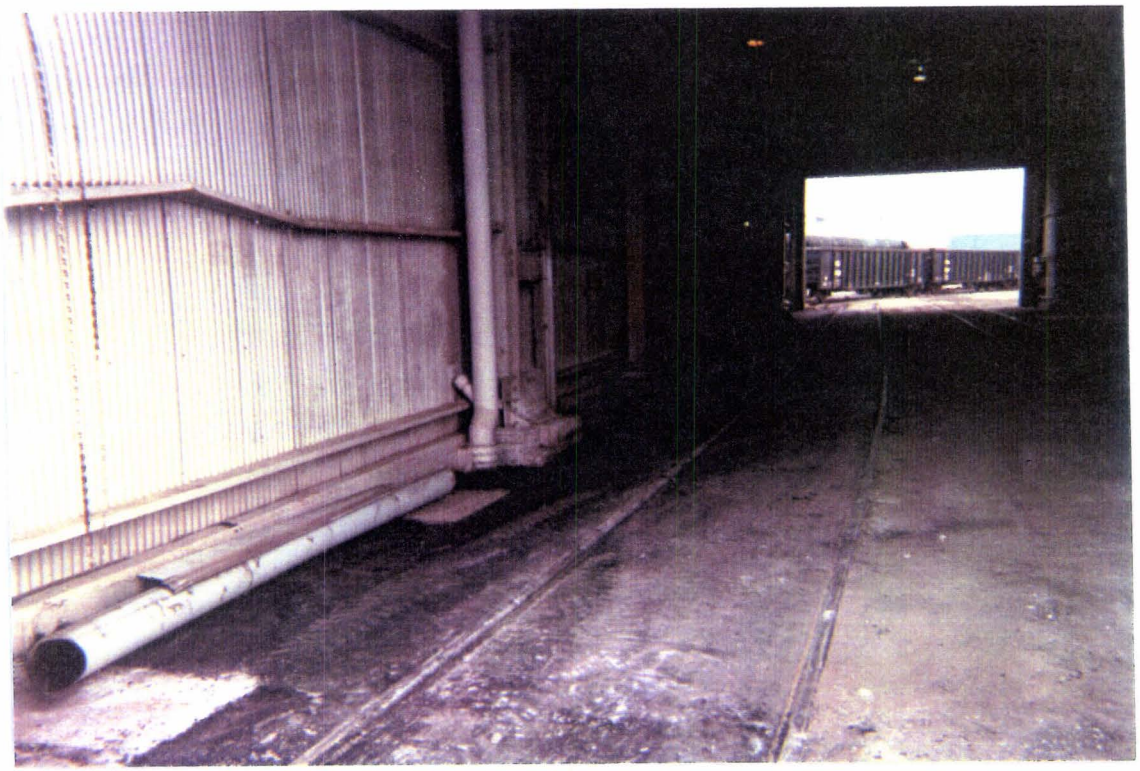

Photo #: 9 Date: 10/31/97
Subject: SWMU 10 EXCAVATION ACTIVITIES
South end of SWMU 10 looking north showing final asphalt limits inside.

Photo #: 10 Date: 10/30/97
Subject: SWMU 10 EXCAVATION ACTIVITIES
North end of SWMU 10 looking south showing asphalt limits outside.

APPENDIX G

Hazardous Waste Manifests - SWMU 10 Excavation

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

THIS DOCUMENT MUST BE USED FOR ALL MISSOURI-DESTINED SHIPMENTS.
INSTRUCTIONS FOR THE COMPLETION OF THIS FORM ARE ON A SEPARATE SHEET.

EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MO D 0 0 7 1 1 1 8 0 2 9 — Manifest Document No. 0 2 0 3 0

2. Page 1 of 1 — Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816) 242-5855

A. Missouri Manifest Document Number 0 0 1 5 1 0 [redacted] 2 0 3 0

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name: BEELMAN TRUCK COMPANY

6. US EPA ID Number: I L D 0 0 7 8 1 4 8 2 5

C. MO. Trans. ID

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number: M O D 9 8 1 5 0 5 5 5 5

G. State Facility's ID: RR0238

H. Facility's Phone (816)453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	NT	47320	P	EPA WASTE CODE K 0 6 1 / STATE N O N E
b.					EPA WASTE CODE / STATE
c.					EPA WASTE CODE / STATE
d.					EPA WASTE CODE / STATE

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	302	T03	
b.			
c.			
d.			

15. Special Handling Instructions and Additional Information
LICENSE# 219-295 IL
24 HOUR EMERGENCY PHONE # ~~800-827-5221~~ 1-800-827-5221 10/21/97
Heritage Environmental Svc.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and applicable state regulations.
If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method available to me that I can afford.

GENERATOR — Printed/Typed Name: MYRL R. WEAR — Signature: Myrl R Wear — Month 10 Day 21 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name: Jeff HASKENHOFF — Signature: Jeff Haskenhoff #684-395 — Month 10 Day 21 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Date

Printed/Typed Name: TANYA COTTEN — Signature: Tanya Cotten — Month 10 Day 21 Year 97

EPA FORM 8700-22 (REV. 9-96) MDNR-HWG 10 PREVIOUS EDITIONS ARE OBSOLETE

CONTAINS 50% RECYCLED PAPER WHICH INCLUDES NOT LESS THAN 20% POST

MISSOURI DNR FINAL COPY - PART 1

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

THIS DOCUMENT MUST BE USED FOR ALL MISSOURI-DESTINED SHIPMENTS.
INSTRUCTIONS FOR THE COMPLETION OF THIS FORM ARE ON A SEPARATE SHEET.

EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M O D 0 0 7 1 1 8 0 2 — Manifest Document No. 0 0 1 5 1 2 0 3 1

2. Page 1 of 1 — Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816 242-5855

A. Missouri Manifest Document Number 0 0 1 5 1 [redacted] 2 0 3 1

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name: BEELMAN TRUCK COMPANY

6. US EPA ID Number: I L D 0 0 7 8 1 4 8 2 5

C. MO. Trans. ID: H-1429

D. Transporter's Phone: (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number: M O D 9 8 1 5 0 5 5 5 6

G. State Facility's ID: RR0238

H. Facility's Phone: (816)453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	50180	P	EPA WASTE CODE K061 / STATE NONE
b.					EPA WASTE CODE / STATE
c.					EPA WASTE CODE / STATE
d.					EPA WASTE CODE / STATE

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	a. S012	T013	
b.	b.		
c.	c.		
d.	d.		

15. Special Handling Instructions and Additional Information
LICENSE# P2143761L
24 HOUR EMERGENCY PHONE # 800-827-5221 Heritage Environmental Svc.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and applicable state regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method available to me that I can afford.

GENERATOR — Printed/Typed Name: MYRL R. Wear — Signature: Myrl R Wear — Month 10 Day 21 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name: Danny Wesbecher — Signature: Danny Wesbecher — Month 10 Day 21 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Date

Printed/Typed Name: TANYA COTTEN — Signature: Tanya Cotten — Month 10 Day 21 Year 97

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED FACILITY

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

THIS DOCUMENT MUST BE USED FOR ALL MISSOURI-DESTINED SHIPMENTS.
INSTRUCTIONS FOR THE COMPLETION OF THIS FORM ARE ON A SEPARATE SHEET.

EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT. OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MOD007118029 — Manifest Document No. 02032

2. Page 1 of 1

Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

A. Missouri Manifest Document Number 0015102032

4. Generator's Phone (816 242-5855

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name: BEELMAN TRUCK COMPANY

6. US EPA ID Number: ILD007814825

C. MO. Trans. ID H-1429

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number: MOD981505555

G. State Facility's ID RR0238

H. Facility's Phone (816)453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	51440	P	EPA WASTE CODE K061 / STATE NONE
b.					EPA WASTE CODE / STATE
c.					EPA WASTE CODE / STATE
d.					EPA WASTE CODE / STATE

GENERATOR

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	S02	T03	
b.			
c.			
d.			

15. Special Handling Instructions and Additional Information
LICENSE# P58 303 IL Trlr# 39173
24 HOUR EMERGENCY PHONE # 800-827-5221

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and applicable state regulations.

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Printed/Typed Name	Signature	Month	Day	Year
MYRL R. WEAR	Myrl R Wear	10	21	97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name	Signature	Month	Day	Year
DWAYNE COX	Dwayne Cox	10	21	97

18. Transporter 2 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Date

Printed/Typed Name	Signature	Month	Day	Year
Tanya Cotten	Tanya Cotten	10	21	97

EPA FORM 8700-22 (REV. 9-96) MDNR-HWG 10 .PREVIOUS EDITIONS ARE OBSOLETE

CONTAINS 50% RECYCLED PAPER WHICH INCLUDES NOT LESS THAN 20% POST CONSUMER WASTE

MISSOURI DNR FINAL COPY - PART 1

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

THIS DOCUMENT MUST BE USED FOR ALL MISSOURI-DESTINED SHIPMENTS. INSTRUCTIONS FOR THE COMPLETION OF THIS FORM ARE ON A SEPARATE SHEET.

EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MOD007118029 — Manifest Document No. 02033

2. Page 1 of 1 — Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816 242-5855

A. Missouri Manifest Document Number 0015102033

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name: BEELMAN TRUCK COMPANY

6. US EPA ID Number: ILD007814825

C. MO. Trans. ID: H-1429

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number: MOD981505555

G. State Facility's ID: RR0238

H. Facility's Phone: (816)453-4321

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	51240	P	EPA WASTE CODE K061 / STATE NONE
b.					EPA WASTE CODE / STATE
c.					EPA WASTE CODE / STATE
d.					EPA WASTE CODE / STATE

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	a. S02	T03	
b.	b.		
c.	c.		
d.	d.		

15. Special Handling Instructions and Additional Information
LICENSE# T102700IL
24 HOUR EMERGENCY PHONE # 800-827-5221 Trlr# 39271

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and applicable state regulations.

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Printed/Typed Name	Signature	Month	Day	Year
Myrl R. Wear	Myrl R Wear	10	21	97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name	Signature	Month	Day	Year
John L Wolk	John L Wolk	10	21	97

18. Transporter 2 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Date

Printed/Typed Name	Signature	Month	Day	Year
TANYA Cotter	Tanya Cotter	10	24	97

EPA FORM 8700-22 (REV. 9-96) MDNR-HWG 10 PREVIOUS EDITIONS ARE OBSOLETE

CONTAINS 50% RECYCLED PAPER WHICH INCLUDES NOT LESS THAN 20% POST

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

THIS DOCUMENT MUST BE USED FOR ALL MISSOURI-DESTINED SHIPMENTS.
INSTRUCTIONS FOR THE COMPLETION OF THIS FORM ARE ON A SEPARATE SHEET.

EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter)

Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M O D 0 0 7 1 1 8 0 2 9 — Manifest Document No. 0 2 0 3 4

2. Page 1 of 1

Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816) 242-5855

A. Missouri Manifest Document Number 0 0 1 5 1 0 [redacted] 2 0 3 4

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name
BEELMAN TRUCK COMPANY

6. US EPA ID Number
I L D 0 0 7 8 1 4 8 2 5

C. MO. Trans. ID H-1429

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number
M O D 9 8 1 5 0 5 5 5 5

G. State Facility's ID RR0238

H. Facility's Phone (816)453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	50920	P	EPA WASTE CODE K 0 0 0 1 STATE N O N E
b.					EPA WASTE CODE STATE
c.					EPA WASTE CODE STATE
d.					EPA WASTE CODE STATE

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	S 0 2	T 0 3	
b.			
c.			
d.			

15. Special Handling Instructions and Additional Information
LICENSE# T115.924 IL.
24 HOUR EMERGENCY PHONE # 800-827-5221 Trlr 39181

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and applicable state regulations.

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GENERATOR

Printed/Typed Name: MYRL R. Wear — Signature: Myrl R Wear — Month 1 0 — Day 2 1 — Year 9 7

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name: Dennis L. Richardson — Signature: Dennis L. Richardson — Month 1 0 — Day 2 1 — Year 9 7

18. Transporter 2 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name — Signature — Month — Day — Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Date

Printed/Typed Name: TANYA COTTEN — Signature: Tanya Cotten — Month 1 0 — Day 2 4 — Year 9 7

EPA FORM 8700-22 (REV. 9-96) MDNR-HWG 10 PREVIOUS EDITIONS ARE OBSOLETE

CONTAINS 50% RECYCLED PAPER WHICH INCLUDES NOT LESS THAN 20% POST CONSUMER WASTE

MISSOURI DNR FINAL COPY – PART 1

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

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INSTRUCTIONS FOR THE COMPLETION OF THIS FORM ARE ON A SEPARATE SHEET.

EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT. OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MOD007118029 Manifest Document No. 02035

2. Page 1 of 1

Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816) 242-5855

A. Missouri Manifest Document Number 0015102035

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name: BEELMAN TRUCK COMPANY

6. US EPA ID Number: ILD007814825

C. MO. Trans. ID: M-1429

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number: MOD981505555

G. State Facility's ID: RR0238

H. Facility's Phone: (816)453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	48080	P	EPA WASTE CODE K061 / STATE NONE
b.					EPA WASTE CODE / STATE
c.					EPA WASTE CODE / STATE
d.					EPA WASTE CODE / STATE

J. Additional Descriptions for Materials Listed Above	K.	HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	a.	S02	T03	
b.	b.			
c.	c.			
d.	d.			

15. Special Handling Instructions and Additional Information
LICENSE# P152817 IL
24 HOUR EMERGENCY PHONE # 800-827-5221 HERITAGE ENVIRONMENTAL SVC.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and applicable state regulations.

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GENERATOR

Printed/Typed Name: MYRL R. Wear
Signature: Myrl R Wear
Month 10 Day 22 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: STEVE REINHARDT
Signature:
Date: Month 10 Day 22 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: JERRY D. COLEMAN
Signature:
Date: Month 10 Day 22 Year 97

EPA FORM 8700-22 (REV. 9-96) MDNR-HWG 10 PREVIOUS EDITIONS ARE OBSOLETE

CONTAINS 50% RECYCLED PAPER WHICH INCLUDES NOT LESS THAN 20% POST CONSUMER WASTE

MISSOURI COPY PART 1

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

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EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MOD007118029 Manifest Document No. 02036

2. Page 1 of 1

Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816) 242-5855

A. Missouri Manifest Document Number 0015102036

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name: BEELMAN TRUCK COMPANY

6. US EPA ID Number: ILD007814825

C. MO. Trans. ID: H-1429

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number: MOD981505555

G. State Facility's ID: RR0238

H. Facility's Phone: (816)453-4321

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	50200	P	EPA WASTE CODE K061 / STATE NONE
b.					EPA WASTE CODE / STATE
c.					EPA WASTE CODE / STATE
d.					EPA WASTE CODE / STATE

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	a. S02	T03	
b.	b.		
c.	c.		
d.	d.		

15. Special Handling Instructions and Additional Information
LICENSE# P246110 IL TRL# 39169
24 HOUR EMERGENCY PHONE # 800-827-5221 HERITAGE ENVIRONMENTAL SVC.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations and applicable state regulations.

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Printed/Typed Name	Signature	Month	Day	Year
Myzl R. Wear	Myzl R. Wear	10	22	97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Bill Shehoen	Bill Shehoen	10	22	97

18. Transporter 2 Acknowledgemen: of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Jerry D. Coleman		10	22	97

EPA FORM 8700-22 (REV. 9-96) MDNR-HWG 10 PREVIOUS EDITIONS ARE OBSOLETE

CONTAINS 50% RECYCLED PAPER WHICH INCLUDES NOT LESS THAN 20% POST

MISSOURI COPY - PART 1

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

OCT 31 1997

HAZARDOUS WASTE MANIFEST

THIS DOCUMENT MUST BE USED FOR ALL MISSOURI-DESTINED SHIPMENTS.
INSTRUCTIONS FOR THE COMPLETION OF THIS FORM ARE ON A SEPARATE SHEET.

EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT. OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: MOD007118029 — Manifest Document No.: 02027

2. Page 1 of 1

Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO, INC.
7000 ROBERTS ROAD, KANSAS CITY, MO 64125
4. Generator's Phone (816) 242-5855

A. Missouri Manifest Document Number: 00151D[redacted]2037

B. G.S.I. (Gen. Site Address): SAME

5. Transporter 1 Company Name: HERITAGE TRANSPORT, INC.

6. US EPA ID Number: IND058484114

C. MO. Trans. ID: H-1464

D. Transporter's Phone: (317)381-6848

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, IN
8525 NE 38TH
KANSAS CITY, MO 64161

10. US EPA ID Number: MOD981505555

G. State Facility's ID: RR-0238

H. Facility's Phone: (816)453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, MERCURY COMPOUNDS, SOLID, N.O.S., 6.1, UN2025, PG II, (MERCURY BATTERIES) ERG# 151	001	DF	00150	P	EPA WASTE CODE D009 / STATE NONE
b. ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S., 9, UN3077, PG III, (BALLASTS) ERG# 171	003	DM	02400	P	EPA WASTE CODE NONE / STATE NONE
c. Environmentally Hazardous Substances, Solid, N.O.S, 9, UN3077, PG III (Ballasts) ERG#171	001	DA	00100	P	EPA WASTE CODE NONE / STATE NONE
d. Environmentally Hazardous Substances, Solid, N.O.S., 9, UN3077, PG III (Capacitors), ERG#171	001	DM	00800	P	EPA WASTE CODE NONE / STATE NONE

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. ~~A. 41330-8~~	S01	T04	Reclamation
b. ~~B. 41330-18~~			
c. -18			
d. -21			

15. Special Handling Instructions and Additional Information
24 HOUR EMERGENCY PHONE #: (816)242-5855
~~TRAILER#~~
LICENSE# 06-222 MO

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GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
MYRL R. WEAR	Myrl R. Wear	10	24	97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ALBERT A. HOLLOMAN	Albert A. Holloman	10	24	97

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
GARLAND D. HANKINS	Garland D. Hankins	10	24	97

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED MISSOURI END FINAL COPY - PART 1

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

THIS DOCUMENT MUST BE USED FOR ALL MISSOURI-DESTINED SHIPMENTS.
INSTRUCTIONS FOR THE COMPLETION OF THIS FORM ARE ON A SEPARATE SHEET.

EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT. OF NATURAL RESOURCES 573-634-2436

Please print or type (Form designed for use on elite (12-pitch) typewriter.)

MF Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MOD007118029 Manifest Document No. 02038

2. Page 1 of 1

Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816 242-5855

A. Missouri Manifest Document Number 0015102038

B. G.S.I. (Gen. Site Address)
SAME

5. Transporter 1 Company Name
BEELMAN TRUCK COMPANY

6. US EPA ID Number ILD007814825

C. MO. Trans. ID

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number MOD981505555

G. State Facility's ID
RR0238

H. Facility's Phone
(816)453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	48960	P	EPA WASTE CODE K061 STATE NONE
b.					EPA WASTE CODE STATE
c.					EPA WASTE CODE STATE
d.					EPA WASTE CODE STATE

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
WS# 41330-20	a. S02	T03	
b.	b.		
c.	c.		
d.	d.		

15. Special Handling Instructions and Additional Information
LICENSE# T102-704 IL.
24 HOUR EMERGENCY PHONE # 800-827-~~5821~~ 5221

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GENERATOR

Printed/Typed Name: MYRL R WEAR
Signature: Myrl R Wear
Month 10 Day 24 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: BRYAN HECK 6801139279
Signature: Bryan Heck
Date: Month 10 Day 29 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: JERRY D. COLEMAN
Signature: Jerry D. Coleman
Date: Month 10 Day 29 Year 97

THIS COPY MUST BE SENT BACK TO THE GENERATOR BY THE DESIGNATED FACILITY

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

HAZARDOUS WASTE MANIFEST

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Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. M O D 0 0 7 1 1 8 0 2 9 — Manifest Document No. 0 2 0 3 9

2. Page 1 of 1 — Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816) 242-5855

A. Missouri Manifest Document Number 0 0 1 5 1 0 [redacted] 2 0 3 9

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name: BEELMAN TRUCK COMPANY

6. US EPA ID Number: I L D 0 0 7 8 1 4 8 2 5

C. MO. Trans. ID 7-1429

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number: M O D 9 8 1 5 0 5 5 5 5

G. State Facility's ID: RR0238

H. Facility's Phone: (816)453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	46820	P	EPA WASTE CODE K 0 6 1 / STATE N O N E
b.					EPA WASTE CODE / STATE
c.					EPA WASTE CODE / STATE
d.					EPA WASTE CODE / STATE

J. Additional Descriptions for Materials Listed Above	K.	HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	a.	S 0 2	T 0 3	
b.	b.			
c.	c.			
d.	d.			

15. Special Handling Instructions and Additional Information
LICENSE# T115-945 IL.
24 HOUR EMERGENCY PHONE # 800-827-~~5221~~ 5221 (SF)

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GENERATOR — Printed/Typed Name: MYRL R. WEAR — Signature: Myrl R. Wear — Month 10 Day 29 Year 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: GEORGE CHONTE — Signature: George Chonte 662-3922 — Month 10 Day 29 Year 97

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19. — Printed/Typed Name: Jerry D. Oleman — Signature: Jerry D. Oleman — Month 10 Day 29 Year 97

EPA FORM 8700-22 (REV. 9-96) MDNR-HWG 10 — PREVIOUS EDITIONS ARE OBSOLETE

CONTAINS 50% RECYCLED PAPER WHICH INCLUDES NOT LESS THAN 20% POST

MISSOURI DNR FINAL COPY - PART 1

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STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL QUALITY
Hazardous Waste Program
P.O. Box 176 Jefferson City, Missouri 65102
573-751-3176

NOV 03 1997

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EMERGENCY RESPONSE	U.S. COAST GUARD 1-800-424-8802	CHEM TREC 1-800-424-9300	DEPT OF NATURAL RESOURCES 573-634-2436

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ML Form Approved OMB No 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. MOD007118029 Manifest Document No. 02040

2. Page 1 of 1 — Information in the shaded areas is required by State law.

3. Generator's Name and Mailing Address
ARMCO STEEL
7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816) 242-5855

A. Missouri Manifest Document Number 0 0 1 5 1 0 [redacted] 2 0 4 0

B. G.S.I. (Gen. Site Address) SAME

5. Transporter 1 Company Name
BEELMAN TRUCK COMPANY

6. US EPA ID Number ILD007814825

C. MO. Trans. ID H-1429

D. Transporter's Phone (314)241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number MOD981505555

G. State Facility's ID RR0238

H. Facility's Phone (816)453-4321

GENERATOR

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	47080	P	EPA WASTE CODE K061 / STATE NONE
b.					EPA WASTE CODE / STATE
c.					EPA WASTE CODE / STATE
d.					EPA WASTE CODE / STATE

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	S02	T03	
b.			
c.			
d.			

15. Special Handling Instructions and Additional Information
LICENSE# T 147-505 IL.
24 HOUR EMERGENCY PHONE # 800-827-~~5521~~ 5221 (SF)

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Printed/Typed Name: MYRL R. Wear — Signature: Myrl R Wear — Month Day Year: 10 29 97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: STEVE REINHARDT — Signature — Date: Month Day Year 10 29 97

18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Printed/Typed Name: Terry D. Coleman — Signature — Date: Month Day Year 10 29 97

EPA FORM 8700-22 (REV. 9-96) MDNR-HWG 10 PREVIOUS EDITIONS ARE OBSOLETE

CONTAINS 50% RECYCLED PAPER WHICH INCLUDES NOT LESS THAN 20% POST

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Hazardous Waste Program
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7000 ROBERTS ROAD
KANSAS CITY, MO 64125

4. Generator's Phone (816) 242-5855

A. Missouri Manifest Document Number 0 0 1 5 1 0 [redacted] 2 0 4 1

B. G.S.I. (Gen. Site Address)
SAME

5. Transporter 1 Company Name
BEELMAN TRUCK COMPANY

6. US EPA ID Number
I L D 0 0 7 8 1 4 8 2 5

C. MO. Trans. ID H-1429

D. Transporter's Phone (314) 241-9600

7. Transporter 2 Company Name

8. US EPA ID Number

E. MO. Trans. ID

F. Transporter's Phone

9. Designated Facility Name and Site Address
HERITAGE ENVIRONMENTAL SERVICES, INC.
8525 NE 38TH STREET
KANSAS CITY, MO 64161

10. US EPA ID Number
M O D 9 8 1 5 0 5 5 5 5

G. State Facility's ID
RR0238

H. Facility's Phone
(816) 453-4321

11. US DOT Description (Including Proper Shipping Name, Hazard Class, ID Number and Packing Group (if any))	12. Containers Number	Type	13. Total Quantity	14. Unit Wt/Vol.	I. Waste No.
a. RQ, HAZARDOUS WASTE SOLID, N.O.S.,9, NA3077, PG III (SOIL/ROCK) ERG# 171	001	DT	44840	P	EPA WASTE CODE K061 STATE NONE
b.					EPA WASTE CODE STATE
c.					EPA WASTE CODE STATE
d.					EPA WASTE CODE STATE

GENERATOR

J. Additional Descriptions for Materials Listed Above	K. HANDLING CODE (FACILITY USE ONLY) INTERIM	FINAL	COMMENTS
a. WS# 41330-20	S02	T03	
b.			
c.			
d.			

15. Special Handling Instructions and Additional Information
LICENSE# T115-918IL.
24 HOUR EMERGENCY PHONE # 800-827-~~5521~~ 5221 (SF)

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Printed/Typed Name	Signature	Month	Day	Year
Myrl R. Wear	Myrl R. Wear	10	29	97

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name	Signature	Month	Day	Year
Bill Shehorn	Bill Shehorn	10	29	97

18. Transporter 2 Acknowledgement of Receipt of Materials — Date

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19. — Date

Printed/Typed Name	Signature	Month	Day	Year
JERRY D. COLEMAN	Jerry D. Coleman	10	29	97

MISSOURI DNR FINAL COPY - PART 1

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